



GOVERNMENT OF INDIA
MINISTRY OF TOURISM & CIVIL AVIATION
(COMMISSION OF RAILWAY SAFETY)

REPORT
ON
संवर्धन अधिकारी
THE WORKING OF THE
COMMISSION OF RAILWAY SAFETY

FOR

1981-82

BY

CHIEF COMMISSIONER OF RAILWAY SAFETY
LUCKNOW

Activities of the Commission

Highlights

I.	Statutory Inspections & Authorisations for opening to passenger traffic.	(a) Diversions (b) Double Lines (c) Gauge Conversion (d) Initiation of Electric traction.	13.03 Kms. 166.54 Kms. 439.33 Kms. 263 route Kms.	Chapter II, para 2.1 (c) Appendix A-1 Do. Do. Do.
II.	Sanctions accorded	(a) Execution of new works affecting the safety of the running road. (b) Application for con- donation of infringement of the Schedules of Dimensions. (c) Movement of Over-dimensional consignments. (d) Running of New types of Rolling Stock on sections of railway where they were not in use.	1797 nos. 42 nos. (including those recommended to the Rly. Board) 176 nos. 48 nos.	Chapter II, para 2.2 Chapter II, para 2.3 Chapter II, para 2.4 Chapter II, para 2.6 & Appendix A-2
III.	Statutory Inquiries held and Recommendations made.	(a) Statutory Inquiries conducted. (b) Number of Remarks and Recommendations made bearing on safety arising out of (a).	38 nos. 220 nos.	Chapter III, para 3.3 & Appendix B-1. Chapter III, Para 3.3.
IV.	Proposals recommended to the Railway Board.	(a) Placement of New types of Rolling Stock.	10 nos.	Chapter II, para 2.6 & Appendix A-2
V.	Inspections and Audit Checks	Periodic Inspection of Govt. Railways. (i) Detailed (ii) Tour	8197 Kms. 10,049 Kms.	Chapter II, para 2.5
VI.	Overscoring the efficacy of the accident prevention machinery on Zonal Railways.	Review of Railway Departmental Enquiry Reports on less serious accidents.	421 Nos.	Chapter III, para 3.6 & Appendices F&G.
VII.	Others	(a) General Appreciation on the Standard of Maintenance of Assets and Operating Practices. (b) Comments on some selected features affecting safety.		Chapter IV Chapter V

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CHAPTER I

The Commission of Railway Safety deals with matters appertinent to safety in rail travel and operation and for this purpose performs certain statutory functions—Regulatory, Inspectional, Investigatory and advisory—laid down in the Indian Railways Act, the Rules framed thereunder and Executive Instructions issued from time to time. It is under the charge of a Chief Commissioner of Railway Safety (hereinafter referred to as C.C.R.S.) with 7 Commissioners (hereinafter referred to as C.R.S.) in charge of Circles having jurisdiction over one or two zonal railways.

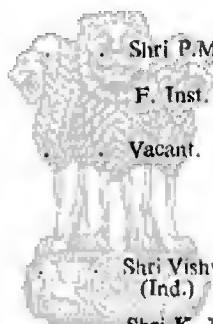
1.1 The Chief Commissioner of Railway Safety as the Head of the Organisation is the Principal Technical Adviser to Government in all matters concerning the Commission. He is assisted by a Technical Wing composed of Deputy Commissioners drawn from 4 major disciplines of railway working and a Deputy Commissioner (General) who also acts as the Leave Reserve Officer. The Headquarters of the Commission are at Lucknow.

1.2 A brief narration on the History of this Organisation, its Functions and Responsibility and Creation of additional Circles and the Technical Wing, is contained in Annexure I.

1.3 **Cadre:**—As on 31st March 1982, the cadre in the Commission of Railway Safety was as follows:—

At the Headquarters

C.C.R.S.	Shri P.M.N. Murthy, B.Sc. (Hons), B.E., F.I.E. (Ind.) F. Inst. P.W.E. (Ind.), M. Inst. R.T. (Ind.), M.ASCE
Dy. CRS (General)	Vacant.



Deputy Cs.R.S. in the Technical Wing

Signalling & Telecommunication (S&T)	Shri Vishwa Prakash, B.Sc., Grad. I.T.E., M.I.R.S.T.E (Ind.)
Electrical Traction (E.T.)	Shri K. Bhojraj, B.E.
Mechanical (Mech.)	Shri M. C. Sinha, B.E.
Operating (Optg.)	Shri F. J. Correya, B.A., M. Inst. R.T. (Ind.)

Cs. R.S. and Deputy CsRS in Circles

Southern Circle, Bangalore	Shri B. P. Sastry, B.E.
Western Circle, Bombay	Shri A. A. Rego, B.E.
Northern Circle, Lucknow	Shri Suresh Chandra, B.Sc., B.E. (Hons.), M. Inst. R.T. (Ind.), M. Inst. P.W.E. (Ind.)
Eastern Circle, Calcutta	Shri K. Ganapati, B.E.
South Eastern Circle, Calcutta	Shri S. Subramanian, B.E.
Central Circle, Bombay	Shri N. P. Vithal, B.E., A.M.I.E. (Ind.), F. Inst. P.W.E. (Ind.).
North Eastern Circle, Gorakhpur	Shri K.J.N. Kutty, B.E.
Dy. CRS (S & T), Eastern Circle, Calcutta	Shri J. Bhattacharjee
Dy. CRS (S & T), Western Circle, Bombay	Shri T. Janardhana Rao, A.M.I.E. (Ind.)

1.4 Jurisdiction

The route kilometrage in the Jurisdiction of each Circle on 31st March 1982 was as follows:-

Name of Circle	Headquarters	Route Kilometrage*	Principal Railways
Western	Bombay	10,293	Western
Central	Bombay	6,309	Central
Eastern	Calcutta	4,325	Eastern
South-Eastern	Calcutta	7,041	South-Eastern
Northern	Lucknow	10,972	Northern
North-Eastern	Gorakhpur	8,776	(i) North-Eastern (ii) Northeast Frontier
Southern	Bangalore	13,648	(i) Southern (ii) South Central

Note.— In addition to the above principal Railways, the Commissioners exercise jurisdiction over the various Metropolitan Transport Projects and Company & Port Trust Railways located within their Circles.

* Included Company and Port Trust Railways.



CHAPTER II

INSPECTION AND OTHER FIELD DUTIES

Inspection of New Lines

2.1 (a) The duties of a C.R.S. pertaining to the inspection of new railway lines including diversions prior to their being commissioned for passenger traffic, to the use of locomotives and rolling stock, and to electrification of lines are contained in the 'Rules for Opening of a Railway or Section of Railway for the Public Carriage of Passengers'. Vide Railway Board's Notification No. 152-p of 1916, the Commissioners of Railway Safety exercise the powers of sanction under Sections 18 and 19 of the Indian Railways Act, 1890 for authorising such new works for traffic.

(b) With regard to the inspection of new lines, doublings, conversions, electrification and major works, it would be unreasonable to assume that the Commissioner of Railway Safety, by mere inspection of such works, can take upon himself, any part of the responsibility which rests squarely on the engineers who have supervised the progress of these works from day to day during the period of construction. At the time of inspection by a C.R.S., defects if any as noticed, are pointed out and remedial measures suggested.

(c) During the year under review, the Commissioners of Railway Safety carried out detailed inspection of new works to the extent below:

(i) Diversions	13.033 Kilometres
(ii) Doublings of sections	166.542 ..
(iii) Gauge conversion	439.334 ..
(iv) Initiation of Electric traction	263.00 ..

A list of these works appears at Appendix A-1.

New Minor Works

2.2 Commissioners of Railway Safety are empowered to sanction new minor works affecting the running lines such as provision of new bridges, re-building or re-girdering of existing bridges, re-modelling of station yards, re-signalling works, alterations or/ renewals and other line capacity works which affect the operation of passenger carrying traffic. These works after being sanctioned are executed by the railway officers and opened under a safety certificate issued by them unless the C.R.S. decides to inspect them before they are commissioned.

During the year, the Commissioners of Railway Safety sanctioned 1797 new minor works of the above type.

Works involving Infringements to Standard Dimensions

2.3 On the recommendation of the Commission of Railway Safety the Railway Board sanctioned 21 applications for works involving Infringements to the Standard Dimensions specified in the Schedules for Broad, Metre and Narrow Gauges. In addition, 21 Infringements were condoned by the C.R.S. under their own powers, bringing the total to 42.

Movement of over-dimensioned consignments

2.4 Various types of heavy machinery, which infringed the maximum moving dimensions, were transported on the Railways, many of them from or to the sea-ports. During the year, transport of 176 over-dimensioned consignments was sanctioned on railways by Commissioners of Railway Safety after due scrutiny subject to such conditions or speed restriction as were deemed necessary.

Periodic Inspections

2.5 During the year, the Cs.R.S. carried out periodical inspection of 8197 Kms. of Government Railways in company with the General Managers concerned. In addition, they carried out tour inspections of Government Railways to the extent of 10,049 Kms. They submitted reports of their inspections to the Chief Commissioner of Railway Safety who in turn forwarded them to the Railway Board for appropriate action. Significant defects noticed during the inspections were discussed at site with the railway officers concerned and copies of inspection reports were also furnished to the General Managers to ensure prompt remedial measures.

New types of locomotives and rolling stock

2.6 On the recommendations made by the Commission of Railway Safety, the Railway Board accorded 10 sanctions to the running of new types of locomotives and rolling stock on routes other than where they were already in use. The Cs.R.S. under their own powers issued 48 sanctions (including trials) for the running of some types of locomotives and rolling stock on the Railways in their jurisdiction over those portions where they were not in operation till then.

A list of locomotives and rolling stock sanctioned for operation during the year is at Appendix-A2.



CHAPTER III

INVESTIGATION INTO ACCIDENTS

3.1 Incidence of Accidents:

(a) The number of accidents which occurred in 1981-82 as advised by the Railway Board on the Government Railways including those reported under Section 83 of the Indian Railways Act, 1890, are given in the table below:

Sl. No.	Railways	No. of Accidents		No. of Accidents under Section 83 of the Indian Railways Act.	
		1980-81	1981-82	1980-81	1981-82
1.	Central	2,667	3,398	71	66
2.	Eastern	1,366	1,723	41	40
3.	Northern	1,546	1,817	61	63
4.	North Eastern	674	918	40	51
5.	North East Frontier	328	428	61	96
6.	Southern	727	735	45	37
7.	South Central	669	1,263	50	56
8.	South Eastern	3,306	3,831	88	98
9.	Western	1,077	1,136	51	38
		12,360	15,269	508	545

The figures in the table do not include such occurrences as persons falling out of trains, persons run over and injuries to station or line staff.

(b) The incidence of train accidents on Government Managed Railways, including those under Section 83 for the period from 1971-72 to 1980-81 and for the year 1981-82, is shown in the following table:

Sl. No.	Category	71-	72-	73-	74-	75-	76-	77-	78-	79-	80-	81-
		72	73	74	75	76	77	78	79	80	81	82
1.	Collisions	57	59	66	66	64	45	54	55	72	69	87
2.	Derailements	667	598	578	696	768	633	705	778	692	825	936
3.	Collisions with road vehicles at Level X-ings	118	131	125	140	105	86	93	86	115	90	84
4.	Fires in Trains	22	25	13	23	27	16	14	12	21	29	23
		864	813	782	925	964	780	866	931	900	1,013	1,130

Note.—While there has been a decline in the incidence of Accidents at Level Crossings and Train Fires*, there has been no let up in the alarming rate of increase in Derailements which was witnessed in the preceding year; the number this year is not only the highest during the period shown in the table, but also since 1965-66 when it was 962. There has been a steep rise in the incidence of Collisions as well, the increase being as much as 26% over the last year. This is again the highest in the table and also since 1963-64 when the number was 93. These are matters for concern and call for concerted measures to arrest this disturbing trend.

3.2 Regulations:

3.2.1 The Rules for the guidance of the officers of the Commission of Railway Safety for holding inquiries into Railway accidents are contained in the "Statutory investigation into Railway Accidents Rules, 1973" notified by the Ministry of Tourism and Civil Aviation.

*(The reduction is as much as about 20% as compared to the previous year)

3.2.2 According to the requirements of "The Railway (Notices of and Inquiries into Accidents) Rules, 1973" notified by the Ministry of Railways (Railway Board), all accidents as described in section 83 of the Indian Railways Act are reported.

3.2.3 The nature of accidents that have to be reported to the Commission under section 83 of the Indian Railways Act, accidents into which "Statutory Inquiries" have to be carried out, the rules and procedure for statutory investigations and their scope are set forth in Annexure-II.

3.3 Statutory inquiries held in 1981-82

3.3.1 During the year, 38 accidents were inquired into by the officers of the Commission of Railway Safety. These are listed in Appendix B-I. Of these, 14 were cases of Collisions between trains, 14 of Derailments, 4 of Collisions between trains and road vehicles at Level Crossings, 2 of Fires in trains and 4 of a Miscellaneous nature.

3.3.2 In this period, inquiries into 7 accidents were entrusted to Railway Administrations in terms of Rule 2.5 of the 'Statutory Investigation into Railway Accidents Rules', on account of heavy work load in the Commission. These are listed in Appendix B-II.

3.3.3 A brief account of the accidents inquired into by the Commission during 1981-82 is given below, along with important Recommendations/Remarks made in the Reports on these accidents:—

(1) *DERAILMENT of No. K. 6 Down Katwa Local train between Samudragarh and Dhatrigram stations, Howrah Division, Eastern Railway on 18-4-1981.*

Casualties: Killed—Nil; Injured—36 (grievous—5)

Cause: Tampering of Railway track by persons unknown.

Recommendations:

(i) (a) The condition of railway track in the Section which had a large incidence of missing fittings and deteriorated sleepers was bad. Necessary corrective measures should be adopted and speed further restricted as necessary.

(b) The excessive superelevation provided in curves in the section should be adjusted.

(ii) The lapses noticed in the working of the operating department, such as—staff remaining overdue periodical medical examination, non-inspection of the stations by officers for long, staff not being deputed for refresher courses as required, non-availability of First Aid Box etc., to be remedied.

(iii) Deficiencies pointed out in the signalling system, such as—poor visibility of Signals due to vegetation, defective signals, delay in the overhauling of relays, to be attended to and the system toned up.

(iv) The apparatus to ensure synchronisation of vacuum and air brakes was not in working order on WDM-2 loco No. 17484. This deficiency which appears to have become a recurrent feature should be set right.

(2) *DERAILMENT of No. 98 Down 'Venkatadri Express' between Malakavemala and Kalasamudram stations, Guntakal Division, South Central Railway, on 22-4-1981.*

Casualties: Killed—Nil; Injured—6 (grievous—3).

Cause: Tampering of the track by persons unknown.

Recommendations:

(i) In view of the frequent attempts at tampering with track on this section, the Law enforcing Authority to be requested to view such attempts seriously and bring the culprits to book. Railway Administration also to take up the issue at the highest level to put an end to this menace.

(ii) The Railway Administration to consider the adoption of anti-sabotage measures such as—burring of fish bolts and welding of rails in vulnerable locations so as to render unauthorised interference with the track structure difficult.

(3) DERAILMENT of 190 Up 'Damoh-Guna Shuttle' train in the station yard of Bina, Central Railway on 22-4-1981.

Casualties: Killed—2; Injured—10 (grievous—2).

Cause: Primarily due to defects in rolling stock (excessive wheel wear and excessive difference in wheel tread diameters), the pronounced wear at the toe of right hand tongue rail acting as a secondary factor.

Recommendations:

(i) Measures to be adopted to reduce the incidence of toe-wear of switches provided on the inside of curves and at a distance of one KM or over from the station through: Provision of a check rail in rear of the 'points'; Use of curved switches; Use of special wear-resistant steel components in the make-up of tongue rails; Specification of tolerances in the gap to be kept between the stock rail and the leading stretcher bar under-neath; and tightness of bolts fixing stock rails on slide chairs.

(ii) Comprehensive review to be made of wear-limits at Points and Crossings and the formulation of the wear-measuring process.

(iii) Additional Points & Crossings Reconditioning Depots to be set up.

(iv) Rational apportionment to be made of tasks between 'Primary Maintenance' 'Secondary Maintenance' and 'Passing Through' train examination, with regard to coaching stock inspection and upkeep.

(v) All rakes to be sent to a pit line periodically, even if the Primary Maintenance Depot does not have this facility.

(vi) Special instructions to be issued regarding care of overdue-POH coaching stock.

(vii) Orders from "High Up" to be so worded as not to sound arbitrary nor be susceptible to erroneous understanding, but must consider all co-existing rules connected with the safety of rail-travel.

(4) SIDE-COLLISION of No. B-90 Up 'Bandra-Bombay VT Local' train with No. CM-15 Down 'Local' at Raoli Junction, Central Railway on 24-4-1981.

Casualties: Killed—28; Injured—79 (grievous—53).

Cause: No. B-90 Up Local having been driven past the King's Circle Up Starter Signal at 'ON'.

Recommendations:

(i) At Raoli Junction flank protection should be provided for over-runs past the Entrance Signal controlling conflicting routes, besides ensuring that the concerned points are set, locked and detected in the correct position.

(ii) On account of the falling gradient of 1 in 91, it is essential to protect the Kurla Chord line against fouling by a run-away load.

(iii) The visibility of Signal No. RVJ-5 at KCE should be improved.

(iv) The following measures need consideration to improve safety generally on the suburban section:—

(a) Reassessment of the Motormen's workload to determine the need for reclassifying Motormen from "continuous" to "intensive" category;

(b) Expediting the introduction of the Automatic Warning System (AWS) on Central Railway's Suburban System;

- (c) Improving the visibility of Platform "Starters" on the Suburban Section.
- (d) Availing the advantage of the existing Guard's or Platform Repeaters; and
- (e) Segregating on double line territories the traffic streams on the fast and slow lines and strictly restricting the use of the available cross-overs.
- (v) The following steps to be adopted to improve the confidence in the functioning of the Signal Department in the Suburban Section:—
 - (a) Railway to restrictedly regularise the recourse to short-cut methods under specified exceptional circumstances.
 - (b) Creation of the post of Signal Fault Controller at Bombay VI; and
 - (c) Display of Route Control Charts at Cabins provided with Panel-interlocking.
- (vi) In view of the performance of the Counters provided with emergency buttons on Control Panels commented upon in the Report, a review to be made of the existing policy of inspection and upkeep of counters.

(5) DERAILMENT of No. 125 'Kerala-Karnataka Express' between Surareddipalem and Ongole stations, Vijayawada Division, South Central Railway on 19-5-1981.

Casualties: Killed—Nil; Injured—3.

Cause: Inadequacies in maintenance of Permanent Way accentuated by inadequacies in maintenance of Rolling Stock.

Recommendations:

(i) Several infractions including contraventions of prescribed conditions came to light indicating a state of serious deterioration in the standards of maintenance and operation of High Speed Trains. Railway Board may direct the Railway Administrations to take necessary steps to ensure that there is no dilution in the attention given to High Speed trains which must be strictly according to the conditions governing the sanctions issued and the technical specifications laid down by the Research, Designs and Standards Organisation (RDSO).

(ii) Urgent steps should be taken to improve the condition of track in the Gudur-Vijayawada section, consistent with the heavy traffic and the authorised speed on that section. If this is not found possible due to unavoidable reasons, speeds and loads should be regulated to realistic levels till such time as the improvements are effected.

(iii) The performance of WAM-4 locomotives has not been satisfactory on the Madras-Vijayawada section. The Railway Board may consider ordering a review of the design aspects of this class of locomotives with a view to improving their riding characteristics. The advisability of reducing the authorised maximum speed of these locos from 110 Km/h to a lower level on this section is emphasized.

(6) COLLISION of No. SG 35 Up 'Budge-Budge—Sealdah EMU Local' with an Accident Relief Train between Park Circus and Sealdah South stations, Eastern Railway, on 4-6-1981.

Casualties: Killed—Nil; Injured—8 (grievous—6)

Cause: Due to the EMU train being driven past Semi-Automatic Signal No. AB. 3 in the 'ON' position without exercising adequate caution.

Recommendations:

(i) Railway to examine the feasibility of improving the drainage of the track between Park Circus and Sealdah in order to avoid repeated failures of Automatic Signals.

(ii) Railway to suitably revise the stencilled instructions in the driving cab regarding General Rule 277, so as to lay stress on the speed restriction which a driver must observe after passing an Automatic Signal in the 'ON' position.

(iii) Provision of a separate Medical Relief Van for the Sealdah South Suburban section at a suitable location in the Calcutta Goods Yard to be considered.

(iv) The installation of the Automatic Warning System to be expedited in the suburban areas.

(v) Railways to take urgent steps through vigorous safety counselling to improve the awareness amongst the Motormen of the relevant safety Regulations pertaining to operation in the Automatic Block territories.

(vi) Railways to conduct ambush checks frequently to detect violation of speed limits and discipline the errant staff.

(vii) Railways to conduct a check of all lines electrified with A.C. Traction and ensure that the correct track relays (of the immunised type) are provided.

(viii) The possibility to be examined of altering the design of the driving cab in Electric Multiple Units by providing a small hood in front, so as to afford greater protection to the Motormen as well as the passengers travelling in the compartment behind the cab against the impact of collision. Concurrently the feasibility of incorporating some 'anticlimbing' device in the headstock of EMUs also to be examined.

(7) Disastrous ACCIDENT to No. 416 Down 'Samastipur-Banmankhi Passenger' train on bridge No. 51 over the Bagmati River between Badla Ghat and Dhamara Ghat stations on the Mansi-Saharsa metre gauge section, North Eastern Railway on 6-6-1981.

Casualties: Killed—270 (as known); Injured—100 (grievous—34).

Cause: Due to the disturbances set up on the train in all probability in the wake of a sudden application of brakes, acting in conjunction with a stormy gale blowing from the left which was adequate to destabilise the train *in that state* and overturn seven of its coaches which had parted from the others--combination of human and natural factors.

Recommendations:

(i) Railways to comply with the Commission's earlier recommendation to include a provision in the Subsidiary Rules authorising Station Masters to refuse 'permission to approach' to incoming trains in the event of cyclonic weather conditions prevailing at their stations portending danger to the travelling public.

(ii) Provision to be made in the Railways' Rule Books/Manuals that Drivers bringing their train to a halt in conditions of stormy weather in mid-section should avoid stoppage on major bridges, high embankments, cuttings and sharp curves, in that order.

(iii) Compliance to be ensured with the Commission's earlier recommendation regarding receipt and dissemination of weather warning messages throughout the year not only in respect of heavy rain-fall but also of high winds.

Matter to be taken up both with the Meteorological and Telegraph Departments to ensure transmission of warning messages with the utmost despatch.

(iv) Wind tunnel experiments to be carried out to determine the nature and extent of forces exerted (and the over-turning effect) on railway coaches in train formation by gales of various velocities and different directions.

(v) Study to be undertaken through mathematical models to obtain precise knowledge on the extent of off-loading of wheels on trains under the several conditions met with during the run (including sudden braking) and the corresponding lateral forces which can lead to derailment or overturning.

(vi) Measures to be adopted to reduce the heavy over-crowding and also to curb the practice of ticketless travelling on trains operating in the Mansi-Saharsa section.

(vii) Steps to be taken to ensure that sub-standard components are not used in couplings.

(viii) Quality of periodic overhaul to be improved.

(ix) Standard of upkeep of steam locomotives to be raised.

(8) *SIDE-COLLISION between No. 1 Up Passenger train and a motor truck between Dehri-on-Sone and Dehri City stations, Dehri Rohtas Light Railway on 11-6-1981.*

Casualties: Killed—3; Injured—1.

(All Pedestrians)

Cause: Rash and negligent driving by the Truck Driver.

Recommendations:

(i) The Local Authority, the Police and the State Government to take necessary action for regulating the parking and movement of trucks in the area to ensure safe passage of pedestrians and Railway trains.

(ii) Railway Administration to provide proper demarcation between road and rail from Km. 1/8 to Km. 1/13.

(iii) Line No. 2 of Dehri-on-Sone which is a Goods line to be isolated from Line No. 1 which is a passenger running line.

(iv) The unmanned Level Crossing near the Workshop siding at Dehri-on-Sone to be provided with barriers or chains.

(9) *COLLISION between No. 132 Down 'Pana-Gomoh Passenger' and 'Up DC Shuttle 3775 Goods' train between Karma Hat and Ranchi Road stations, Eastern Railway on 14-6-1981.*

Casualties: Killed—1; Injured—10 (grievous—2).

Cause: The Up DC Shuttle passed Up Starter and Advanced Starter in the 'ON' position due to weak brake power thus causing obstruction in the next block sections and 132 Down train not controlled short of obstruction.

Recommendations:

(i) The visibility of Up and Down Outer Signals at Karma Hat station being only 400m and 428m. a suitable speed restriction should be imposed on the approach of these signals.

(ii) Station Master's Control on the Advanced Starter Signals should be provided expeditiously.

(iii) The overhaul of Line and Track Relays which are over-due should be expedited.

(iv) There were 61 failures of the Tokenless Block Instruments at Karma Hat station during the last one year of which 31 failures were due to mal-operation. Switchmen should be adequately trained in this regard.

(v) Fixed Warners should be converted into working Warners.

(vi) Serious note should be taken of the infraction in respect of safety marshalling of coaches on No. 132 Down Passenger.

(vii) Shortcomings such as—delay in deputing staff for refresher courses and periodic medical examinations; non-inspection of the station by Officers during the last 3 years; non-inspection by Traffic Inspectors every quarter as required; all the prescribed items not being found in the First Aid Box; etc. to be set right.

(viii) The brake power certificate issued for 132 Down showed 100% active cylinders, whereas after the accident, only 13 cylinders were found active out of 16 and of the remaining 3, 2 were converted train pipe. Staff at fault to be severely disciplined.

(ix) Loco No. WG 8956 which hauled the Passenger train had no speedometer and there was no synchronisation between the vacuum and steam brakes.

(x) Surprise checks to be carried out of brake power of Coal Pilot and requisite remedial measures taken based on the results thereof.

(10) *DERAILMENT of No. 10 Down 'Passenger' between Darjeeling and Ghum stations on the Darjeeling-New Jalpaiguri Narrow Gauge section, Northeast Frontier Railway on 16-6-1981.*

Casualties: Killed—Nil; Injured—34 (grievous—12).

Cause: Over-turning of the coaches caused by running on a curve at speed in excess of the maximum permissible, in a heavily and unevenly loaded condition.

Recommendations:

(i) Drivers of Narrow Gauge trains should be better educated in driving within permissible speed limits and their driving monitored frequently by Supervisory Officials.

(ii) Railway Administration to fix a safe speed limit for 610 mm stock under conditions of dense occupancy with passengers on the roof and sides duly taking into account the track and rolling stock parameters, their dynamic response characteristics, etc. Railway Ministry to issue suitable instructions on the subject to all railways operating on 610 mm gauge.

(iii) Railway Administration to issue suitable standing instructions for the guidance of the staff in charge of stations and trains that whenever severe or overcrowding is apprehended, the concerned Officers are apprised in time so that the possibility of running another train or putting in additional coaches could be considered.

(iv) Working Time Table to be reviewed and timings adjusted so that the minimum running times are attainable without exceeding the maximum permissible speed.

(v) Speed limits to be related to Up and Down gradients rather than Up and Down trains as at present.

(vi) Chief Engineer to review the present practice of Engineering Officers inspecting the track by road and lay down guide lines for adequate inspection of track at appropriate levels.

(vii) Provision of check rails to be expedited.

(viii) The special Schedule of Dimensions for 610 mm gauge understood to be still under consideration of the RDSO (since 1971) to be finalised without further delay and its provisions implemented.

(11) *COLLISION between No. 1 KCR Down 'Special Goods' train and No. 33 Down 'Indore-Bilaspur Express' between Bhanwar-tonk and Khongsara stations, South Eastern Railway on 16-7-1981.*

Casualties: Killed—50; Injured—49 (grievous—23).

Cause: Due to non-adoption of sufficient precautions resulting in the goods train getting out of control on the graded section and entering the block section occupied by the Express train.

Recommendations:

(i) The practice of working all trains including Passenger, Mail and Express trains under 'block ticket' on the wrong line as a matter of routine whenever one line in a double line section is blocked should be discontinued forthwith and 'block ticket working' should be confined only to Light Engines, Accident Relief Trains, Coaching trains for transhipment purpose, Motor Trolleys, Departmental Material Trains, Ballast Trains and Special trains carrying oversize loads.

(ii) Whenever it is necessary to have single line Working between Khodri and Khongasara due to the disablement of a Down train in the section, it should be over the entire Ghat section from Khodri to Khongasara and not between the intermediate block stations only. This procedure should apply to all steeply graded sections (1 in 150 or steeper).

(iii) Driver should be made fully aware of the provisions in the Drivers' Rule Book and the Operating Manual regarding the procedure to be adopted to handle trains disabled on steep down gradients.

(iv) The permissible speed for descending trains in Ghat sections should be determined in accordance with the method laid down by the RDSO and pending the same speed on the concerned section to be limited to 30 Km/h.

(v) A comprehensive Subsidiary Rule should be framed and issued detailing the procedure to be followed for handling trains on steep down gradients.

(vi) Railway Board may re-consider their extant policy on the provision of catch sidings issued in 1965. A catch siding to be provided short of Bhanwartonk station.

(vii) It is desirable that the minimum number of wagons the brakes of which have to be pinned down in case of stoppage on a down gradient, should be separately detailed for trains of four-wheeler stock and of roller bearing stock such as BOX, BCX, etc. for all the sections of this Railway and others which have long sustained gradients.

(viii) The inordinate delay in the movement of the Medical Relief Van carrying the injured from site and the serious omission on the part of the Divisional Authorities in letting an injured passenger continue to remain in the Express train (and who expired before the train could reach Bilaspur) instead of transferring him to the Medical Van to be taken up and measures adopted to prevent a recurrence.

(12) DERAILMENT of No. 1 Up 'Delhi-Ahmedabad Mail' between Ambliyasan and Dan-garwa stations, Western Railway on 18-8-1981.

Casualties: Killed—31; Injured—56 (grievous—26).

Cause: Unauthorised interference of the track.

Recommendations:

(i) A review to be made of the Accident Relief Medical Equipment Scale-I and the Plan of action drawn up to provide medical aid to casualties at the site of an accident and at the nearest station.

(ii) Ministry of Home Affairs to be apprised of the non-compliance of the Government's directive in regard to preparation of a factual joint note by the Police and Railway Officials in accidents suspected to have been caused by sabotage and asked to reiterate the instructions and ensure their inclusion in the Police Manuals of States.

(iii) Provision of flasher lights be made applicable to all diesel and electric locomotive working on the M.G. double line sections as well and where the BG and MG lines are in close proximity, priority being given to routes carrying superfast trains.

(iv) Suggestions made by the Commission for improving communications at the time of major railway accidents to be implemented.

(v) Regular monitoring of track on Superfast/Trunk Routes both on the BG and MG to be ensured.

(vi) Regular checks on night patrolling to be carried out during monsoon, by Supervisory Officials not only by travelling on trains, but also through as many trolley inspections as possible.

(vii) Railway Board to issue unified instructions providing for clearance of wreckage prior to Police permission even in cases involving suspected sabotage to the bare extent necessary to save life or to extricate passengers and injured.

(13) *DERRAILMENT of No. 2 PG 'Mixed Train' on platform No. 6 of Patna Junction, Eastern Railway on 23-7-1981.*

Casualties: Killed—3; Injured—28 (grievous—12)

Cause: Spread of gauge aggravated by excessive speed.

Recommendations:

(i) Versines of turn-in curves on loops to be checked periodically, documented and rectified.

(ii) Railway Board to clarify the position regarding provision of superelevation on curved track in yard lines.

(iii) Condition of the Permanent Way on the platform lines at Patna to be improved.

(iv) Infractions such as: delay in deputing staff for medical examination, irregular inspection of stations, passengers being allowed to travel on the Loco and Brakevan, non-provision of chains and flags at Level Crossing No. 8-C etc. to be set right.

(v) The recurrent feature of the synchronising apparatus in steam locos being out of order to be taken note of and effective steps taken to prevent recurrence.

(vi) The standard of carriage examination to be improved.

(vii) Inadequacies noticed in the working of the Signal Engineering Department such as: large incidence of failure of signals at Parsa Bazar non-testing of cables periodically as prescribed, etc. to be made good.

(14) *COLLISION between No. 2 DSK Down Passenger Train and empty load of KF Special Goods train at Pilkhani station, Northern Railway, on 24-7-1981.*

Casualties: Killed—Nil; Injured—3 (all grievous).

Cause: The Passenger Train having been received on the occupied Down loop line.

Recommendations:

(i) Complete track-circuiting of station section up to the block clearance limit at panel interlocked stations should be expedited on top priority and no new works of panel interlocking should be undertaken until then.

(ii) The working arrangements at panel interlocked stations which are not yet provided with complete track-circuiting should be reviewed and additional transportation staff posted where warranted to ensure adequate compliance with the rules. The tardy progress made by the Northern Railway in this regard despite the instructions issued by the Railway Board as far back as in April 1979 to be taken serious note of.

(iii) When loads are stabled on running lines, the points leading to the occupied lines should be cotter-bolted and feed to the motor-operated points disconnected wherever possible.

(iv) The Advanced Starter Signals at Pilkhani which are located about 670 m beyond the trailing points to be relocated so as to be at 120 m beyond the trailing points.

(v) Station Masters to be made personally responsible for ensuring double locking of relay rooms and proper maintenance of records regarding the entry of Signal Maintenance Staff into that room to guard against any unauthorised interference with the system.

(vi) Early action to be taken to change the normal position of gates of the 'C' class Level Crossing No. 90 to 'closed' instead of 'open' to road traffic and ensure compliance with extant orders vide Railway Board's letter No. 77/W3/SG/LX/2 dated 16-3-79, or upgrade the Crossing if the census of traffic warrants the same.

(15) *OCCURRENCE of casualties among passengers of No. 508 Down and No. 510 Down suburban trains at Barasat station, Eastern Railway on 29-7-1981.*

Casualties: Killed—Nil; Injured—10 (grievous—4).

Cause: Due to a 90 lb rail-post fixed alongside the track being disturbed by miscreants and coming in contact with the passengers of these trains.

Recommendations:

(i) The offending rail post which was a speed check post in dis-use, as also other similar posts existing at other stations to be removed immediately.

(ii) The various shortcomings pointed out such as: staff remaining over-due medical examination and refresher course, lack of night inspections by Station Master, improper alignment of lock bar, bad condition of the rail head of points No. 30, poor visibility of the gate Home Signals, arrears in overhauling of track relays, lack of speedometers in EMU trains, absence of gate lamps at Level Crossing No. 3C/E, to be attended to.

(16) *COLLISION between No. EC 445 Up Goods and No. EC Kanpur Special Goods trains at Yadugram Block Hut station, Eastern Railway on 3-8-1981.*

Casualties: Killed—2; (Railway Servants) Injured—Nil.

Cause: Due to the locomotive of the 'Kanpur Special' having been left unattended on a descending grade of 1 in 85 without adopting necessary precautions and application of vacuum brakes resulting in the train rolling down into the section and colliding with No EC 445 Up Goods train.

Recommendations:

(i) Railway Administration should institute a special drive to counsel Electric Drivers in trouble shooting.

(ii) The special instructions in force regarding the movement of trains on the Gujhandi-Gurpa graded section to be elaborated as suggested to ensure the safety of passengers.

(iii) The prescribed adequate distance of 400 metres for block release to be provided at the 4 block huts between Gujhandi and Gurpa.

(iv) The phenomenon of excessive creep (over 150 mm) noticed on the section to be examined and suitable anti-creep measures finalised on priority.

(v) The several shortcomings pointed out such as: a large number of relays (72 Nos.) remaining overdue POH, veeder counter for re-setting of axle counter being out of order, visibility of the Up Home Signal of Dilwa station being poor, staff being overdue periodic medical examination and refresher training, non-inspection of Gurpa station by the Traffic Inspector for over 2 years (1978 and 1979) and by any officer in 1980, absence of the Vacuum Gauge with the Guard of Kanpur Special; non-provision of cross-protection for track relays, non-provision of holding for points No. 24W of Gurpa, to be attended to very early.

(17) *COLLISION of No. 82 Up Passenger train with the parted runaway rear portion of Up 'Kota Special Goods' train between Fatehpur Sikri and Rupbas stations, Western Railway on 8-8-1981.*

Casualties: Killed—5; Injured—45 (grievous—6).

Cause: Intentional parting of the Up Kota Special goods train when it stalled on a rising gradient of 1 in 200 without taking due precautions before uncoupling, resulting in the rear portion rolling back and colliding with the Passenger train.

Recommendations:

(i) A review to be immediately undertaken on vulnerable sections where stalling of Goods trains is a regular phenomenon by conducting fresh trials of the maximum loads which can be safely hauled by each class of locomotives and the maximum loads revised for such locomotives under normal conditions with a reduction during monsoons.

(ii) All Railways to be directed to re-frame and issue comprehensive instructions covering the re-examination of stabled loads and the maximum time up to which a previously examined load could be allowed to run without further examination at originating and out lying stations. Such instructions to be also incorporated in the Operating Manuals of Railways.

(iii) The Western Railway to revise and up-date its Operating Manual incorporating the several innovations in train operation recently introduced and reprint the Manual within a time bound programme. Railway Board to direct other Railways to do likewise.

(iv) The Western Railway's practice of not supplying Kerosene oil to Guards for lighting their side lights at night to be revised so as to ensure compliance with the provisions of General Rule 144. As the malpractice of not lighting side lights of brake vans at night appears to be widespread on all Railways, Railway Board to direct other Railways also to comply.

(v) Visibility at level crossings on the section to be improved.

(vi) The station yard at Rupbas to be modified and the station working rules revised as suggested.

(vii) The visibility of the Up Approach Signals of Rupbas station to be improved. Railway Board to alert all Railways to take special care in siting gate lodges and duty bunks in such a manner that they do not obstruct/impair the visibility of Signals and Crossings.

(18) COLLISION between No. 535 Up 'Passenger' and a Shunting Engine at Gorakhpur, North Eastern Railway on 11-8-1981.

Casualties: Killed—Nil; Injured—1 (grievous).

Cause: Shunting Engine coming on to the running line from the siding which was not isolated from the running lines as should have been done.

Recommendations:

(i) In future planning for major works, the duration of non-interlocked working should be reduced to the barest minimum by suitable phasing.

(ii) Non running lines should be isolated from the running lines by key type locks when non-interlocked working is resorted to. (This was not done although it was one of the conditions imposed by the Commissioner of Railway Safety while according sanction to the work). Pending this safety measure, all passenger trains should be stopped at the first Reception Signal and piloted into the station.

(iii) Steps to be taken to ensure that there is no recurrence of contravention of the specific condition imposed by the Commissioner while authorising the opening of the Gonda-Gorakhpur section that all train passing staff should be fully conversant with the revised working instructions and record an assurance to this effect.

(iv) It came to light that there was considerable disregard for adherence to Rules and Procedures in various aspects. Railway Administration to take effective measures to ensure that officers and staff *at all levels* comply with the Regulations and Procedures evolved after decades of experience.

(v) Railway Administration to prescribe a minimum period to be spent in each grade by staff in safety categories before they are eligible for promotion to the next grade, so that they acquire the requisite experience before shouldering higher responsibilities. (In the instant case the Assistant Station Master who was considered culpable was appointed as a Signaller in March 1977, promoted as Assistant Station Master in the very next month and again promoted to the next higher grade in February 1980).

(19) *COLLISION of No. 25 Up Island Express' with ERJD Goods train in Jolarpettai station yard, Southern Railway on 19-8-1981.*

Casualties: Killed—1; Injured—15 (grievous—3).

Cause: Due to the Express train being permitted to enter the block section which the Goods train had not yet cleared.

Recommendations:

(i) Ministry of Railways to issue a directive to all Railways to ensure that the prescribed standards for various posts in the safety categories are applied uniformly to all candidates irrespective of the community they belong to. Also a minimum qualifying service in each grade to be prescribed before a person is considered for promotion to the next higher grade.

(ii) The infractions detailed in the Report such as: non-accountal of the utilisation of the Emergency TLR Release; non-exchange of Private Numbers between the Station Staff and Gatemen of Level Crossings, non-inspection of Cabins periodically by the Station Superintendent as required and not carrying out Mock Drills on the turn-out of the Accident Medical Relief Van (which infractions were pointed out in the Report on the earlier Collision accident near Kettandapatti station on 11-2-81, but with little response) to be set right without delay.

(iii) Southern and South Central Railway administrations to make an urgent review of the duty rosters of Assistant Station Masters and Switchmen and also take action to end the chronic shortage in these categories resulting in long working hours which is not conducive to safety.

(iv) The emergency track circuit indication release in the Sykes type of Block Instruments which is being grossly misused by the operating staff, to be removed, as was done in the case of the SGE type.

(v) The functioning of the machinery on Railways for taking note of and implementing the accepted safety recommendations of the Commission has been often found wanting. It should be toned up.

(20) *COLLISION between No. 7 Up 'Tinsukia Mail' and No. 6 PGN 'Shuttle' train in Gauhati station yard, Northeast Frontier Railway on 20-8-1981.*

Casualties: Killed—6; Injured—17 (grievous—11).

Cause: Due to the Shuttle train being started from Line No. 4 against the Starter Signal which was in the 'ON' position while the Mail train was being received into the station.

Recommendations:

(i) Suitable Subsidiary Rules to be framed requiring the Station Master to satisfy himself that the Starter Signal is taken 'off' before giving permission to start a Passenger train.

(ii) The visibility and functioning of the Down Starter Signal on platform No. 4 left much to be desired. Railway Administration to improve the standard of inspection and maintenance of signals.

(iii) Lapses noticed such as: absence of charts on speed-recorders, train passing staff not being in possession of valid Competency Certificates and assurance not being obtained from such staff, deficiencies in the Brake Van equipment, to be set right.

(iv) The Railway Board's instructions (vide No. 78/Safety (A&R)/29/24 dated 1-6-79) that the Driver and First Fireman should identify each signal affecting the movement of the train as soon as it becomes visible, to be incorporated in the Railway's Rule Book without further delay.

(v) A departure bell to be provided on platform No. 4 and rigid adherence to rules regarding its use enforced.

(21) **DERRAILMENT** of No. 121 Up 'Tamil Nadu Express' near Ralapet station, South Central Railway on 31-8-1981.

Casualties: Killed—16; Injured—86 (grievous—27).

Cause: Train having been driven in excess of the authorised speed and failure of the Management to curb the tendency of over-speeding by Drivers.

Recommendations:

- (i) The machinery for monitoring of speeds of Express trains to be made effective and over-speeding tendencies of Drivers to be curbed.
- (ii) The attitude of a section of railway officials who have developed an obsession for 'speed at any cost' to be corrected.
- (iii) Violations of conditions of statutory sanctions issued by the Commission to be stopped and steps taken to avoid a recurrence. Pending the adoption of the required corrective measures speed of high speed trains on the GT route to be reduced to 100 Km/h.
- (iv) Track and Rolling Stock used for operation of High speed trains to be rigidly maintained to the standards prescribed.
- (v) The need to adequately look after the requirements of passengers involved in such accidents till they reach their destinations by the alternate arrangements made, to be brought home to all Railway Administrations.

(22) **DERRAILMENT** of No. 92 Down 'Muzaffarpur-Tata Express' at Barhiya station Eastern Railway on 7-9-1981.

Casualties: Killed—Nil; Injured—2 (grievous—1).

Cause: Due to the Express train being driven past the Down Loop Starter Signal in the 'ON' position.

Recommendations:

- (i) Instructions to be issued to all Station Masters to exercise greater care in preparing Form OP/T 27 (authority to pass a Signal in the 'ON' position) and strictly in accordance with the instruction printed on the Form.
- (ii) Instructions to be issued to the concerned staff to treat a train movement from the platform line to another loop line or Main line ahead as a shunting move and to follow the provisions of the Rule Book in this regard; Working Instructions of this and other similar stations to be amended accordingly.
- (iii) Subsidiary Rules of Railways be revised providing for the issue of written instructions to cover shunting operations in specified cases.
- (iv) System to be geared up to ensure the despatch of Medical Vans to sites of accident immediately on receipt of the first information; such Vans to be worked preferably by diesel locomotives.
- (v) The entire station section of Barhiya to be track-circuited; in the interim, private numbers to be exchanged between the Assistant Station Master on duty and the Cabin Switchman for verification of line clearance. Similar action to be initiated at all other stations with a similar lay-out.
- (vi) Railway Administrations to review the Working Rules of all stations with peculiar lay-outs and ensure that they are clear and explicit.

(23) **COLLISION** of No. 17 Down 'Madras-Jammu Tawi Janata Express' and No. 423 Down Bitragunta-Vijayawada Passenger between Tsundru and Tenali stations, South Central Railway on 5-10-81.

Casualties: Killed—1; Injured—12 (grievous—3).

Cause: Due to the Express train having been permitted to enter the block section which was still occupied by the Passenger train.

Recommendations:

- (i) The 'Emergency Release' facility of Axle Counters to be kept out of bounds for operating staff at stations.

(ii) Staff to be trained adequately in the maintenance of sophisticated signalling installations using Axle Counters.

(iii) Study teams to be set up on Railways to examine the performance of Axle Counters and a review of their design and functioning to be undertaken by the RDSO before their extension to other locations is considered.

(iv) Railway Administrations to tone up the efficiency of the Training Institutions and also improve the standards of in-service monitoring of staff connected with Train Working and Train Examination.

(v) Railway Board to examine the inadequacy in the quality of supervision at various levels and cause the adoption of necessary corrective measures. Also accountability to be identified and assigned to the levels they belong irrespective of the status of such levels in the hierarchy.

(vi) VPUs due for POH not to be permitted to continue in service. Measures to augment the infrastructure for POH to be put through on top priority in order to retrieve the position in the shortest possible time span.

(vii) Station Working Instructions to be amplified to include the procedure to be followed when relief engines or trains are to be sent on blocked line in situations where the Axle Counters are used as a means of splitting up the block sections.

(viii) The advisability to be examined of revising the circuitry of Axle Counters in such a manner that indications appear in the Cabins and stations on the double line only when trains move in the direction of traffic.

(ix) Railway Administrations to be suitably alerted to ensure that vacuum levels on trains are invariably maintained at the levels prescribed.

(24) OUTBREAK OF FIRE in 2nd Class coach No. CR 9300 of No. 4 Down 'Bombay Calcutta Mail' at Bhaironpur station of Bhusawal Division, Central Railway on 19-10-1981.

Casualties: Killed 1; Injured 8.

Cause: Due to the exploding of a Kerosene-burning pressure-stove while unlawful cooking activities were in progress at the front of the coach.

Recommendations:

(i) Allottees of reserved coaches to be suitably cautioned in writing regarding the written undertaking assuring compliance with the relevant Rules be made a condition Rules prohibiting the use and carriage of inflammable articles and furnishing of such a precedent to the allotment.

(ii) Machinery on Railways to be geared up to check and ensure that there is no contravention in the reserved coaches, of Rules prohibiting the carriage of inflammables, and clear-cut directives to be laid down on the action to be taken when such violations come to light.

(25) HEAD-ON COLLISION of No. 329 Up Passenger train with No. 45 Down 'Samastipur-Danapur Express' at Sathajagat station, North Eastern Railway on 12-11-1981.

Casualties: Killed—7 Injured—49 (grievous—15)

Cause: Due to the Passenger train being driven past the Up Home Signal of the station in the 'ON' position.

Recommendations:

(i) Medical Officer to be always available at all stations where Accident Relief Vans are maintained; suitable arrangements to be made during periods when the nominated officer may be absent on leave or for other reasons.

(ii) Supervisory Officials to check and ensure that staff are well conversant with the Station Working Rules.

(iii) Steps to be taken to ensure that locomotives turned out from the sheds are equipped with all fitments and are in good fettle.

(iv) A review of all stations to be made to ensure that the signalling and interlocking arrangements provided are in conformity with the approved plans (At Sathajagat, despite an officer having certified to that effect, there was no conformity and the installations were deficient in certain respects).

(v) The Lever Frame in the East Cabin to be housed in a permanent structure and maintained adequately.

(vi) Shelf-type relays to be provided with anti-tilting arrangements.

(vii) Indication of control circuits to be provided on all telegraph posts and diagrams in the boxes containing the portable telephones.

(viii) Blanking of the Alarm Chain apparatus also in Ladies compartments, which is not in accordance with extant orders, to be checked and restored.

(ix) Urgent steps to be taken to obtain an adequate number of anti-telescopic SLRs.

(x) Rakes of all Passenger trains to be examined over the pit, preferably during day light.

(xi) Railway to ensure provision of adequate brake power on trains and factual certification; surveillance in this regard to be undertaken by officers through surprise checks.

(26) DERAILMENT of No. 177 Down 'Pune-Jammu Tawi Jhelum Express' at Bhiringi station, on the Khandwa-Itarsi section, Central Railway on 14-11-1981.

Casualties: Killed--4; Injured--28 (grievous--7).

Cause: Due to a locomotive component dropped on the run forming an obstruction in the path of the train.

Recommendations:

(i) The methodology of fitting gear cases of various designs on WDM-2 Locomotives to be reviewed comprehensively to avoid their dropping on the run.

(ii) The frequencies of calibration of the Speed-recording instruments fitted on locos, the level at which the post-calibration certification is recorded and the periodicity and the manner of calibration of the test-benches to be reviewed to ensure that the Locomotive Drivers have a dependable instrumentation for measuring the road-speed.

(iii) A permanent high-level multi-disciplinary task force be established in the Railway Board, the Zonal and Divisional levels to quickly probe into unusual occurrences involving safety of train operation and evolve and implement necessary corrective measures.

(27) OUT-BREAK OF FIRE in No. 209 Up 'Rewari-Marwar Passenger' train between Borawar and Besroli stations, Northern Railway on 17-11-1981.

Casualties: Killed--3; Injured--12 (grievous--7).

Cause: Ignition of some inflammable material carried unauthorisedly by some one travelling in the compartment.

Recommendations:

(i) Blanking 'off' of alarm chain to be resorted to only as an extreme step after an actual review based on supporting data.

(ii) Compliance to be ensured with the extant orders regarding issue of Caution Order to Guards/Drivers of Passenger trains whose alarm chains are blanked off and recording the same on the brake power certificate.

(iii) Adequate time should be made available for primary/secondary maintenance of rakes

(iv) Provision of fire extinguishers in working order to be ensured on all Passenger trains.

(v) Safety marshalling instructions for Passenger trains to be strictly complied with.

(28) *DERRAILMENT of No. 322 Down 'Nagpur-Tatanagar Passenger' train between Sonua and Lotapahar stations on the Rourkela-Chakradharpur section, South Eastern Railway on 27-11-1981.*

Casualties: Killed—Nil; Injured—20 (grievous—1).

Cause: In all probability due to distortion of short welded rail track which had been fully opened out for through packing, compounded by presence of jammed joints in rear of the point of drop.

Recommendations:

(i) Caution to be observed while opening consecutive sleepers of short welded panels for track maintenance even when rail temperature does not exceed $T_s + 25^{\circ}\text{C}$ particularly in certain unfavourable circumstances.

(ii) Some of the provisions of the SWP Manual to be modified in the light of this accident.

(iii) Temporary casual labour gangs not to be deployed on maintenance of track except when assisting permanent gangs.

(iv) Railway Board's final orders on the maximum number of jammed joints that can be allowed in stretches laid with short welded panels to be expedited.

(v) Railway to take concerted action to overcome the problem of creep and of missing fittings from the track in the interests of safety of rail travel.

(29) *LEVEL CROSSING ACCIDENT—Collision of No. 87 Up 'Tatanagar-Patna Express' train with Tourist Bus No. WMH-4645 at the 'A' Class manned Level Crossing at Km 322/2-3 between Burnpur and Asansol stations, South Eastern Railway on 28-11-1981.*

Casualties: Killed—3; Injured—14 (grievous—8)
(all on the bus)

Cause: Due to the gates of the Crossing being left open to road traffic at the time of passage of the Express train.

Recommendations:

(i) The Railway to approach the State Government to initiate proposals for the replacement of this level crossing by a road over-bridge expeditiously.

(ii) The Railway to see that properly qualified and literate Gatemen are posted at such important and heavily worked level crossing gates.

(iii) The Railway to arrange wide publicity to the amendment to the Motor Vehicles Rules issued by the Government of West Bengal in 1976 by means of advertisements in the newspapers and exhibition of slides at cinema houses in various important towns in the region covered by South Eastern Railway.

(iv) The Railway Administration to make sure that extant instructions regarding night inspections of the level crossings are duly followed by the officials in-charge of the various departments at the divisional level.

(v) The Railway to take steps to improve the maintenance of the emergency telephone sockets and ensure that they function satisfactorily.

(vi) Standard of maintenance of signalling and telecommunication appurtenances at Level Crossings to be improved in the interests of safety.

(vii) Railway to ensure that Gatekeepers receive timely advice about arrival of trains to enable them to close the gates with minimum detention to road traffic.

(viii) The Railway to ensure that the brake-vans are invariably provided with stretchers and vacuum gauge.

(30) *LEVEL CROSSING ACCIDENT—Collision between No. 6 K M Passenger train and Motor Truck No. URJ 1695 at manned Level Crossing No. 37 C between Hapur and Hafizpur stations, Northern Railway on 1-1-1982.*

Casualties: Killed—6; Injured—7 (grievous—6)
(All truck travellers)

Cause: Due to the Level Crossing being left open to road traffic in the face of the approaching train.

Recommendations:

- (i) The Portable Control Phones carried by Train Guards to be well maintained.
- (ii) Non-maintenance of the synchronisation between the vacuum and steam brakes on locos which appears to have become a chronic feature to be corrected.
- (iii) Responsibility for providing the essential safety equipment on trains (such as emergency portable lighting equipment) to be clearly pin-pointed.

(31) *DERRAILMENT OF No. 3 Down Assam Mail at Sempur station on the Barauni-Katihar section, Northeast Frontier Railway on 24-1-1982.*

Casualties: Killed—Nil; Injured—10 (grievous—3).

Cause: Due to failure of inadequately maintained track under conditions of longitudinal compression and heavy lateral loads from an overloaded VPU.

Recommendations:

- (i) Railway Administration to arrange an urgent and special inspection of track on which passenger-carrying trains run by senior Engineering Officers and restrict the maximum permissible speeds of such trains suitably.
- (ii) In the context of the accumulated arrears of track renewals and the apparent reluctance of Engineers to impose speed restrictions despite the risk involved, Railway Board to reiterate that the primary duty of Permanent Way Staff is to ensure safety and consider issue of guide lines on the restrictions necessary relative to the condition of various types of track.
- (iii) Railway Board to consider firm implementation of a policy to utilize available resources on making up the arrears of renewal and not on additional kilometrage.
- (iv) Railway to ensure that Parcel vans and other coaching vehicles attached to passenger-carrying trains are those nominated for such service and subjected to the same schedule of P.O.H. and maintenance as the passenger coaches on that service.
- (v) Coaches overdues POH (where used under unavoidable circumstances) to be examined and certified by nominated Supervisors/Officers at a higher level before they are put on Mail/Express trains.
- (vi) Scope and procedures of medical examination of categories like Drivers to be amplified to ensure that those manning the controls are fit and alert.
- (vii) Effective measures to be taken to check overloading of VPUs.
- (viii) Vacuum Exhausters to be maintained adequately: a proportion of rakes of passenger-carrying trains certified by TXRs to be subjected to surprise checks by nominated Supervisors and Officers to ensure prescribed standards.
- (ix) Railway Board to set up suitable machinery to ensure timely feed-back from Railways on the implementation of their instructions issued pursuant to the Commission's recommendations.

(x) Railway Administration to stipulate inspections by Last Vehicle for PWIs only, leaving the Assistants free to supervise maintenance works; Additional PWIs to inspect their charge once a month by foot; and adherence to inspection schedules by officials to be more closely monitored to ensure complete coverage including run-through lines in station yards.

(xi) Infractions and deficiencies noticed such as: lack of First-Aid Box; Fire Extinguisher overdue test; staff not deputed for refresher training; absence of anti-tilting arrangements for shelf-type relays; unsatisfactory upkeep of signalling gear and lacunae in the installation; recovery and scrutiny of speed charts to be corrected.

(32) Head-on COLLISION of No. 21 Down 'Hyderabad-Hazrat Nizamuddin Express' train with 'Agra-Itarsi Goods' train near the Marshalling Cabin at Agra Cantt. station, Central Railway at about 04.12 hours on 27-1-1982.

Casualties: Killed—64; Injured—26 (grievous—13)

Cause: Due to the Express train being driven past the Approach Signals of the station at 'Danger'.

Recommendations:

- (i) (a) The Vigilance Control Device (VCD) on Diesel-Electric Locomotive to be re-commissioned within the shortest time-span.
 - (b) A suitable design of VCD be evolved very early for wider adoption.
 - (ii) Rules regarding cautious driving of trains during foggy weather be strictly enforced through improved surveillance and counselling.
 - (iii) Extant Rules for train working in foggy weather to be reviewed.
 - (iv) Certain safer operating practices suggested for observance during foggy weather be considered for adoption.
 - (v) Disaster-Prevention Strategies as suggested to be formulated for Cabin-level implementation.
 - (vi) The measures indicated for curbing over-speeding be implemented.
 - (vii) Safety Marshalling Instructions be reviewed, having regard to basic requirements of passenger safety and also the existing constraints.
 - (viii) The standard of examination of goods trains at originating stations be improved.

(33) ***COLLISION*** between No. 5 Down 'Kamrup Express' and a road vehicle between Chal-khoa and Dibrugarh Town stations, Northeast Frontier Railway on 3-2-1982.

Cause: Driver of the Truck losing control, while trying to overtake another vehicle in the same direction and coming so near the Railway track as to make contact with the train approaching from the opposite direction.

Recommendations:

- (i) Railway to replace, repair and provide barriers between road and track at other vulnerable locations as required.
 - (ii) State Government to be pressed to enforce discipline in the movement of road traffic, confining it to prescribed lanes and preventing overtaking at vulnerable locations, etc.
 - (iii) The nature and quantum of work essential for safety purpose should be assessed and requisite funds must be provided.

(iv) Railway to ensure that essential works are adequately funded.

(v) Alarm chain apparatus to be blanked off only on approved trains and un-exceptioned compartments.

(34) *DERRAILMENT of No. 17 Up 'Madras-Jaffnu Tawi Janata Express' at Km. 808/9 between Ghorandongri and Barbatpur stations, on the Itarsi-Nagpur section of Central Railway on 7-2-1982.*

Casualties: Killed—Nil; Injured—1 (grievous)

Cause: Failure of Equipment-Track.*

(*Based on the Preliminary Report)

(35) *DERRAILMENT of 'Coal Special' train and its fatal fall from Bridge No. 35 between Adderley and Hillgrove stations on the Mettupalayam-Udagamandalam Metre Gauge section, Southern Railway on 21-2-1982.*

Casualties: Killed—8; Injured Nil.
(Railway Employees)

Cause: Due to the Train getting out of control on the steeply graded section and rolling back.

Recommendations:

(i) Maintenance tolerances of the rack and pinion arrangement in Kallar-Coonoor rack section to be laid down and rigidly followed.

(ii) Future supplies of rack bars to be obtained to the correct specifications.

(iii) Track in the rack section to be laid with steel trough sleepers with a properly designed mounting arrangement for rack bars, replacing the existing wooden sleepers gradually.

(iv) Periodic joint inspections of the rack and pinion system by the Assistant Mechanical Engineer and Assistant Engineer to be prescribed.

(v) The provision of check rails on curves and guard rails on bridges in the rack section to be considered.

(vi) Pending the compliance of items (i) to (v) above, Passenger services on the Kallar-Coonoor rack section to remain suspended.

(vii) Replacement of the present 'X' Class steam locomotives by Diesel locomotives of sufficient haulage capacity with the latest design of gripping arrangements to be considered.

(viii) A unified Manual to be brought out incorporating all the technical and operational aspects pertaining to the working of trains on the rack and pinion system of the Nilgiri Mountain Railway.

(36) *LEVEL CROSSING ACCIDENT—Collision of S. 143-A Down 'Puri-Jharsuguda Express' train with a Motor Truck (No. 2461 WGB) at 'B' Class triple-manned Level Crossing No. 3 at Km. 123/2-3 on Hiji-Kharagpur section, South Eastern Railway on 3-3-1982.*

Casualties: Killed—4; Injured—1 (grievous)
(All truck travellers)

Cause: Due to the Level Crossing being left open to road traffic at the time of approach of the Express train.

Recommendations:

(i) The Advanced Starter of the Down East Coast Main Line to be operated from the North Cabin and not from the ground frame of Level Crossing gate No. 1 as at present.

(ii) Railway to ensure observance of provisions in Subsidiary Rules requiring the ASMs to carry out personal testing of the S&T installations, such as Ground Frames before accepting re-connection memo from S&T staff.

(iii) Railway to lay down clear instructions regarding the personal responsibility of Signal Inspectors to check the interlocking whenever a lever is replaced in a Ground Frame or the interlocking is disturbed in any way.

(iv) Railway to institute a drive to ensure availability of essential safety equipment such as Stretcher, Fire-extinguisher, Emergency light and fusees in brake-vans of passenger-carrying trains.

(37) *LEVEL CROSSING ACCIDENT—Collision between No. 131 Up Jayanti Janata Express' and Road Bus No. APR 5727 at Level Crossing No. 34 C in Kolnur station yard, South Central Railway on 20-3-1982.*

Casualties: Killed—61; Injured—32 (grievous—17)

Cause: Due to the Road Bus being allowed to enter the path of the Express train.

Recommendations:

(i) Railway Administrations to review the working of Level Crossings, located within station limits and worked by station staff and initiate action to upgrade the protection measures at such Crossings.

(ii) The inability of the Railway Administration to work to the guidelines prescribed by the Railway Board in the matter of manning of unmanned level crossings and provision of safety aids at manned level crossings to be reviewed by the Ministry of Railways urgently and means found to make the necessary funds available.

(iii) Attention of the State Government to be drawn to the infractions noticed and the need for strengthening the existing law enforcing machinery with a view to discipline the Drivers and owners of road vehicles suitably.

(iv) Ministry of Shipping and Transport to persuade all State Governments to legislate in their Motor Vehicles Rules for compulsory stoppage and making sure by Drivers that the way is clear even at manned Level Crossings.

(38) *COLLISION of No. 166 Down 'New Bongaigaon - Howrah Janata Express' and the parted load of Up 'Diesel shunting Special Goods' between Purbasthali and Nabadwip Dham stations, Eastern Railway on 22-3-1982.*

Casualties: Killed—Nil; Injured—9 (grievous—1)

Cause: Admission of the Express train into the block section occupied by the parted load of the Shunting Goods train.

Recommendations:

(i) Through running of trains over the loop line at Purbasthali to be prohibited and interlocking to be suitably modified so that the loop line Home Signals in the 'off' position lock the relevant Starters.

(ii) The shortcomings pointed out in the maintenance of signalling installations and in the working of the Operating Department to be made good.

(iii) Railways to exercise greater care in the selection of Diesel Drivers and also to conduct a review to weed out incompetent ones.

3.4 Incidence of serious accidents inquired into during the period 1971-72 to 1981-82

3.4.1. The comparative position of serious accidents inquired into by the Commission during the year 1981-82 and those of the preceding 10 years is indicated in Appendices 'C' and 'E'.

3.4.2. It would be seen from Appendix 'C' that the number of accidents inquired into has been the highest so far as also the casualties and damage to railway assets.

3.4.3. The break-up of serious accidents under main categories in Appendix 'D' shows that Collisions contributed to about 40% and Derailments to about 31% of the total accidents during the period 1971-72 to 1981-82. Whereas the number of Collisions which occurred in 1981-82 was the same as in the previous year, derailments recorded a steep increase this year.

3.4.4. The break-up of accidents by principal causes is at Appendix 'E'. It will be seen that Human failure directly attributable to train-working and train-signalling staff continued to be the major single factor in the causation of accidents. The percentage for 1981-82 was 47.4 as against 46.0 for the preceding 10 years period 1971-72 to 1980-81. The need for sustained efforts on a continuing basis to enlarge and step up the introduction of sophisticated aids, concurrently with the adoption of improved methods of selection, training, supervision and performance review was emphasised in the previous year's Report. The progress achieved in this direction has not been substantial and the urgency of accelerating the pace is indicated.

3.5. About 220 recommendations aimed at improving the element of safety were made by the Commission as a result of statutory inquiries into serious accidents conducted during the year. While a number of these recommendations have been accepted by the Railway Board/Railway Administrations, some are pending. The effective implementation of the suggestions put forth by the Commission would significantly contribute in enhancing the standards of safety in rail operations.

3.6. Accidents enquired into by zonal Railways

3.6.1. (a) Whereas the statutory inquiries held by the Commission cover only important accident of a serious nature, other accidents falling under section 83 of the Indian Railways Act are enquired into departmentally and the Railway Administrations send the proceedings to the Commissioners for review.

(b) In the year 1981-82 proceedings of departmental enquiries held by Committees of Railway officers into 421 train accidents were received in the Circle Offices. These are listed categorywise and by principal causes in Appendix 'G'. A summary of some selected accidents is given in Appendix 'H'.

3.6.2. The railway-wise and categorywise position of accidents under Section 83 of the Indian Railways Act for the last four year period viz., 1978-79 to 1981-82 is set out in Appendix 'F'.

It may be seen from the comparative statistics displayed in Appendix 'F' that there was an increase in the number of Derailments on all the Railways except the Northern, Southern and Western this year. The total for all the Railways was 311 as against 289 the previous year. There was also an increase in the total number of Collisions 61 against 48 the year previous. There was however some reduction in the number of Train Fires from 28 in 1980-81 to 23 in 1981-82. The incidence of Level Crossing Accidents falling under Section 83 was the same as last year.

3.6.3. (a) A study of Appendix 'G' which contains the causewise break-up of accidents under Section 83 of the Indian Railways Act enquired into by the Railways, shows that about 37% of Derailments were the result of failure of mechanical equipment (such as axle/journals, Roller bearings, brake gear, tyres/wheels coupling apparatus, suspension and bogie components) about 18% due to failures or defects in Permanent Way and about 14% due to mismanipulation by Driving Crew/excessive speed. As regards Collisions nearly 50% resulted from the 'Passing of Signals at Danger' and other failures of Driving Staff. Want of circumspection on the part of Road users contributed to nearly 75% of accidents at Level Crossings.

(b) The total estimated cost of damage to railway assets resulting from these accidents falling under Section 83 was nearly 4.51 Crores. (This does not take into account some of the accidents for which figures of damage are still to be received). The bulk of the damage was the result of Derailments in which there has been a spurt.

(c) As stated in para 3.1 (b) of the Report, the incidence of Derailments which registered a sharp increase in 1980-81 has shown a further rise this year and is the highest since 1965-66. The urgent need for strengthening the infrastructure for the maintenance of rolling stock and Permanent Way, instituting greater surveillance on the performance of train-working and maintenance staff, and reduction of the accident potential at Level Crossings through manning, upgradation and improvement of visibility etc., is reiterated.



CHAPTER IV

4. MAINTENANCE OF RAILWAY ASSETS AND OPERATION

4.1. Pursuant to the acceptance of a recommendation made by the Railway Accidents Committee—1962, the Chief Commissioner of Railway Safety is required to include in his Annual Report a general appreciation of the condition and maintenance of Railway assets, with special reference to safety in train operation. The reduction or otherwise in the incidence of consequential accidents is the index of safety in train operation in so far as the public are concerned and this has been dealt with in Chapter III. In this Chapter, an appreciation is given of the state of maintenance of assets having a vital bearing on safety based on the observations made by the Officers of the Commission during their periodic and other inspections.

4.2. Reports of Commissioners and Deputy Commissioners of Railway Safety in the Technical Wing of the Commission on inquiries into accidents and inspections of Open Line Sections, New Lines, Doublings, Gauge Conversions, Electrifications, etc., feature specific instances of shortcomings and highlight several departures from accepted practices and procedures. Some important observations contained in these reports which were duly communicated to the concerned Railway Administrations and the Railway Board are summarised below in broad outline.

4.3. The Permanent way

A. Formation.—There was need for improving the formation in some of the portions inspected :

(i) The slope of the cutting at Km 21 on the Dharmanagar-Kalkalighat section of the Northeast Frontier Railway, whose collapse had been prevented for the time being with the provision of some make-shift scaffolding, required to be stabilised through appropriate remedial measures. The formation of the proposed Broad Gauge alignment in the Rangiya section had been constructed in such a way that it encroached on the Metre Gauge portion. Retaining walls were to be built to contain the slopes with suitable side drains. On the Moradabad-Bareilly section of the Northern Railway, the width of formation was less at several locations and was to be made up.

(ii) The Drainage was poor on the Lumding-Badarpur and the Katihar-Siliguri sections on the Northeast Frontier Railway and the Saharanpur-Moradabad & Moradabad-Bareilly sections of the Northern Railway.

(iii) The cess required attention at some places on the Katihar-Siliguri and Saharanpur-Moradabad sections.

B. Curves.—The maintenance of curves was found to be unsatisfactory in some cases; e.g.:

(a) *On the Northeast Frontier Railway.*—(i) There was considerable divergence from prescribed values in respect of gauge, versines and superelevation on Curve No. 39 in the Katihar-Siliguri section. The ballast shoulder was inadequate and fastenings of sleepers were loose.

(ii) The variation in versines was abnormal on Curve No. 22 on the New Bongai-gaon-Rangia section and No. 107 on the Lumding-Badarpur section. While there was shortage of ballast on both, on the former several sleepers were out of square; fishbolts were loose, dogspikes were deficient, the joint gaps were wide and the rail heads battered.

(b) (i) There was wide variation in versines on Curve No. 18 on the Saharanpur-Moradabad route of Northern Railway.

(ii) The alignment of Curve No. 12 on the Bombay-Vadodara section of Western Railway was irregular and the Curve required immediate attention.

C. Points and Crossings.—The upkeep of Points and Crossings left much to be desired and instances of inadequate supervisory surveillance continued to feature: e.g.—

(i) At Points No. 22 of Manderdisa station on the Northeast Frontier Railway the cross levels were out and the nose of the crossing as well as the running rails were worn, the rail table being about 3 mm lower than the check rail and there were marks of wheel ride on the check blocks. Dogspikes were deficient.

(ii) At Points No. 8 W of Bhadohi station on the Northern Railway, gauge was tight both on the straight and turnout up to 7 mm and cross levels were out by 12 mm. The wear on the nose had reached 8 mm and nonstandard liners had been used in through bolts.

At points No. 10 W of Shahzad Nagar station on the same Railway, cross levels were out up to 12 mm on the turnout and the packing under the crossings was loose. The left tongue rail was chipped off over a length of about 22 cms. Two stud bolts were loose in the switch assembly and some keys & jaws were missing.

(iii) At Points No. 28 of Bhinwalla station on the Western Railway the standard of reconditioning of the crossing was unsatisfactory.

(iv) A perusal of the Points and Crossings Register of the Ajarka section on Western Railway revealed that the Assistant Engineer was not recording the results of his independent inspection but was merely initialling the earlier reports of the Permanent Way Inspectors.

(v) Examination of the Register maintained by the Permanent Way Inspector showed that the Assistant Engineer had not inspected the points and crossings negotiated by Passenger trains during the whole of 1980 and had inspected only two or three such points and crossings during the first six months of 1981. Attention had been drawn by the concerned Commissioner in one of his inspection reports two years ago to a similar omission; apparently no corrective action had been taken.

D. Track Maintenance.—The standard of maintenance continued to be below par on several stretches. Some of the significant factors contributing to this state of affairs were as usual: the arrears in track renewals, deficiency of ballast and inadequate supervision.

(a) *On the Northern Railway:* (i) The sanctioned track renewal works of 1977-78 on the Rajdhani route were still to be carried out.

(ii) The situation was the same on the Sadalpur-Bikaner-Delhi route. In fact there was a backlog on this line of 165 Kms of rail renewals and about 180 Kms of sleeper renewals pertaining to earlier periods. It was assessed that with the current pace of supply of materials and allotment of funds, it would take 7 to 8 years for the backlog to be cleared.

(iii) Short supply of material was prominently in evidence on the Saharanpur-Moradabad section where renewals were getting affected on this account and track maintenance was posing problems.

(b) *On the Northeast Frontier Railway:* (i) The percentage of unserviceable sleepers was as high as 30 on the Barsoi-Kishanganj section.

(ii) Although rails had been renewed on the New Bongai-Gaon-Rangia section, sleepers were still due renewal in a length of about 100 Kms and the incidence of unserviceable sleepers was quite high. It was apprehended that the delay in provision of new sleepers coupled with the shortage of ballast might cause an irretrievable damage to the new rails put in.

(iii) In the Lumding-Badarpur section supply of materials was pending for track renewals approved earlier. There were 8 rail fractures on this section in a length of 39 Kms, 5 of them having occurred in a single week in Km 27. There was a general shortage of ballast in this section.

(iv) The position of availability of materials for sanctioned works was no better on the Dharmanagar-Silchar section and the percentage of unserviceable sleepers had risen warranting urgent attention in a stretch of about 100 Kms.

E. (i) Running was not satisfactory on the Ghaziabad-Etawah (Km. 1281 to 1318), Saharanpur-Laksar, Najibabad-Dharampur and Degana-Ratanagar sections of the Northern Railway.

(ii) Shortage of ballast was pronounced specially on the shoulders of the welded track on the Katihar-Siliguri section of the Northeast Frontier Railway.

F. Of the 14 serious derailments which were inquired into by the Commission in 1981-82, inadequate maintenance of track featured in 7. This is a trend which needs to be noted with seriousness and curbed.

4.4 Level Crossings

(a) It was mentioned in the Annual Reports for 1979-80 and 1980-81 that not much progress had been achieved in reviewing and improving the standards of protection at Level Crossings in the light of the instructions issued by the Railway Board on the provision of Safety Devices at Level Crossings vide their letters Nos. 77/W-3/SG/IX/2 dated dated 16-3-79 and No. 78/W1/IX/87 dated 22-11-79. It has become necessary to place on record in this Report as well that the progress continues to be poor and very little headway has been made in the manning of unmanned Crossings where the traffic moment has considerably exceeded the prescribed limits, and in upgrading and providing the required safety devices at others. It may be noted that the Railway Board's directive of 22-11-79 required that Level Crossings where the train vehicle units had gone up to 10,000 should be manned out of turn immediately and the compliance advised to the Railway Board before 31-1-1980. Inspections made during the year revealed that there were several unmanned Level Crossings on the South Central Railway (perhaps the position on the other Railways may not be much different) where the traffic was much above the prescribed limit, but which continued to remain unmanned. There were also several manned Level Crossings which did not have safety aids commensurate with the traffic handled by them. It appeared that the paucity of funds was one of the main handicaps. This is a matter which may receive the close attention of the Ministry of Railways, so that adequate funds are made available to Railways to enable them to comply with the Railway Board's directives issued over 3 years ago without further delay.

(b) Inadequate surveillance/maintenance was another feature which came to light, e.g.—

On the Northern Railway.—(i) Level Crossing No. 168 ('C' Class) on the Sadulpur-Bikaner section had no proper inspection book; a new inspection book had been issued just prior to the inspection in 1981; the visibility of road vehicles was poor and the approaches were loosely packed.

(ii) Level Crossing No. 98 at Mahendragarh station which had been manned without due sanction did not have a gate lodge. The list of working equipment and working instructions was also lacking.

(iii) Level Crossing No. 493 on the Saharanpur-Moradabad section was being operated by a Gateman who was poor in his knowledge of Rules.

(iv) Level Crossing No. 458 'B' Class in Dhampur Yard had check rails higher than the running rails on both Up and Down main lines; over 30% of sleepers on the approaches were loose.

(v) The track was not adequately maintained over several other Level Crossings of this Railway-Level Crossing No. 431 on the Saharanpur-Moradabad section, 412 on the Moradabad-Bareilly section and 5 & 58 on the Pratapgarh-Mughalsarai section.

(c) The Gateman at Level Crossing No. 134-C of Kota Division of Western Railway was not conversant with the Protection Rules. Although a telephone had been installed quite sometime ago, the system of exchange of private numbers was introduced only on the day of inspection. The road gradients were awry.

4.5 Bridges.—Inadequate attention in maintenance was reflected on some of the bridges inspected, e.g.—

(a) On the Northeast Frontier Railway. (i) A broken bearing was found on Bridge No. 71 on the Lumding-Badarpur section. 11 Bridge timbers required replacement and the spacing between timbers in some cases was more than that permissible. Although it was reported that the girders had been painted in 1980-81, the top flange was corroded. The approaches were short of ballast.

(ii) On Bridge No. 20 between Charaibari and Kalkalighat stations, the Dharmapur end abutment which had leaned had been relieved by a wooden crib. It was understood that the lean was present ever since the section was opened in 1965. That such situation should have been left uncorrected for so long was a matter for concern and it was high time that the abutment was rebuilt.

(iii) Suitable measures were required to be planned without delay in consultation with the State Government to contain the effects of the river alongside Bridge No. 20 between Katakhali and Salchapra stations.

(iv) The lower portion of girders on Bridge No. 490 on the New Bongaigaon-Rangiya section was corroded and speed restrictions had been imposed on this account. Renewal of girders was urgently called for.

(b) On the Western Railway.—(i) The bearings of Bridge No. 172 at Dahanu Road station were badly rusted and filled with rubbish. The waterway required to be cleared.

(ii) A perusal of the entries in the Bridge Register regarding Bridge No. 1008 on the Ahmadabad-Abu Road section revealed that replacement of unserviceable timbers had not been carried out for several years. Many bearing plates were found to be loose and rattling. It appeared that the follow-up action on the inspection notes was unsatisfactory.

(iii) On Bridge No. 804 (Sookri Bridge) on the above section, no trolley refuge had been provided as prescribed in the Schedule of Dimensions. Although there was a wash-away at this bridge some years ago, the bridge had not been classified as 'Vulnerable', nor had any sign-boards indicating the past history put up on the approaches in accordance with Railway Board's instructions.

(iv) The condition of trough flooring and bridge sleepers was poor on Bridge No. 786 (Kivarti Bridge) on the Ahmadabad-Abu Road section. Bearing plates were loose and rattling. The bridge had not been marked as 'Vulnerable' although it was so.

(v) The bearing plates on Bridge No. 15 on the Ahmedabad-Jaipur-Rewari route were also loose and rattling. The Guard rails on the approach did not have the prescribed complement of spikes.

4.6. Signalling and Interlocking

Delays in carrying out the stipulated maintenance schedules and lack of drive in progressing the implementation of safety works continued to feature as in the past-- for instance :—

(i) Lever frames and Station Master's Control frames had not been overhauled in due time at many stations on the Eastern Railway and this infraction had become a chronic feature on that Railway. Such instances came to notice on the Western Railway as well -- Alwar Junction and 10 other stations of Jaipur Division.

(ii) Delays in the periodic overhauling of relays and periodic testing of cables was another omission which was widespread. Apart from most stations on the Eastern Railway, the schedules were out of gear even at some important Junction Stations--such as—Tundla (Northern Railway), Delhi Main and Varanasi (M.G.)

(iii) Over 500 failures of track-circuits were reported at a single station—Mahesana. Western Railway. Apparently due care had not been exercised in using the proper quality of materials for insulation joints.

(iv) Shelf-type relays were not provided with anti-tilting arrangements at several stations on the Central Railway. This was noticed at some other stations as well: Katihar on the Northeast Frontier Railway, Sempur & Sathajagat stations on the North Eastern Railway and Tundla & New Delhi stations on the Northern Railway. Some Railways took the plea that no specific orders in this regard had been received from the Railway Board, although such instructions had been issued in the past pursuant to a recommendation made by the Commission.

(v) The crank handle for electric point machines had not been interlocked as required in the CTC section of the Northeast Frontier Railway.

(vi) The safeguard of interlocking the Loop line Starters with slot levers (to ensure that trains which are run through over the loop do so at restricted speed) had not been implemented at many stations, e.g., Gwalior on the Central Railway and stations on the Moradabad-Chandausi & Chandausi-Bareilly sections of Northern Railway.

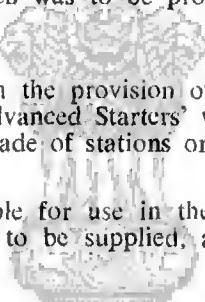
(vii) Signals are required to be fixed at an adequate distance (300 m) from the fouling marks at running junctions in terms of extant instructions. This had not been done at some stations e.g., Barhan Jn. on the Northern Railway.

(viii) There were 101 stations on the Northern Railway where the Advanced Starters were located at a distance of a full train length beyond the trailing points, but this portion had still not been provided with track-circuiting as recommended by the Commission. It appeared that this safety work which was to be progressed on priority was not receiving due attention.

(ix) The progress achieved on the provision of the 'one slot one train' feature and the 'Station Master's control on 'Advanced Starters' was found to be woefully inadequate, as revealed during the inspections made of stations on the Eastern and Northern Railways.

(x) Portable telephones suitable for use in the electrified Madras-Trivellore section of the Southern Railway were still to be supplied, although electric traction had already been commissioned on the section.

4.7. Operation

 राष्ट्रीय लोकन

Several features in train operation bearing on safety came to notice during the year such as : non-compliance with extant regulations and procedures by train working and train signalling staff; lack of supervision of stations and trains; staff not being deputed for periodical medical examination as well as periodical refresher courses on due dates; vacancies in train passing categories remaining unfilled resulting in staff working beyond normal duty hours etc.

(i) Violations of safety marshalling continued to occur, e.g.—The SLR next to engine of 16 Up Viramgam to Rajkot (Western Railway) was found with the luggage portion wrongly marshalled on 28-8-81; 19 Down Express which arrived at Godhra (Western Railway) on 7-10-81 had its SLR wrongly marshalled with the passenger portion trailing 15 Down Saurashtra Special (Western Railway) inspected on the same day had the rear SLR mismarshalled with the passenger portion trailing as noticed at Bharoch; a non anti-telescopic SLR had been marshalled outside the A.T. Coach on 132 Down Passenger (Eastern Railway) on 14-6-1981.

(ii) A few goods trains were noticed while passing Jeonathpur on the Northern Railway with the last vehicle board deficient and only a small piece of red cloth tied instead.

(iii) 604 Passenger ex Barauni Jn. checked at Katihar on the Northeast Frontier Railway on 31-8-81 was found to have no vacuum gauge in the rear brakevan; the same was the case with 124 Down Passenger which was checked at Salmari station and 174 Down Passenger which arrived at Rangiya on the Northeast Frontier Railway on 1-9-81 had neither tail lamp or LV board.

(iv) At Katipura station (Western Railway) although it was provided with tokenless block instruments separate instructions regarding the working of these were not available. At Jeonathpur (Northern Railway) the reasons for the issue of disconnection Memo by the Signal Inspector were not indicated in the Station Master's Register. At Kalol Jn. (Western Railway), the Station Working Rules did not indicate the specific areas which fell within the jurisdiction of the Cabinman and the Assistant Station Master for the purpose of verification of line clearance before granting 'line clear'. At Kani Makhas station (Northern Railway) the Station Working Rules did not incorporate the provision of telephone connection between the station and Level Crossing No. 87 and the system of exchange of private numbers between the station staff and Gatekeeper. At Patli station (Northern Railway) the three diagrams displayed in the Station Master's room, the Station Working Rules and the Station Master's slide frame were dissimilar. At Karmahat station (Eastern Railway) the Appendices were not connected with the Station Working Rules; these were required to be referred to by the Station Staff before furnishing their assurance.

(v) At Aligarh Jn. (Northern Railway), one of the Levermen was found overdue periodical medical examination by about 9 months. At Chauraibari station (Northeast Frontier Railway), one of the Assistant Station Masters was sent for periodical medical examination about 4 months after the due date. Such omissions were common at several stations on the Eastern Railway.

(vi) The Station Master of Chauraibari was not in possession of valid Block Competency Certificate. At Shikohabad (Northern Railway) several staff were found overdue renewal of competency certificate from November 1980. 9 Assistant Station Masters at Purbasthali (Eastern Railway); 2 Assistant Station Masters and a Shunting Jamadar at Barasat (Eastern Railway and some staff at Haldwani, Pantnagar and Lalkua (North Eastern Railway) were overdue refresher training. At Purbasthali, 3 substitutes were found working as Pointsman without any initial training.

(vii) No officer had carried out the inspection of Karmahat (Eastern Railway) for a period of 3 years ;the Traffic Inspectors had also not inspected this station as per schedule laid down. Jodhpur station which had been allotted to the Senior Divisional Operating Superintendent for inspection was found to be in arrears in this regard.

(viii) On the Bangalore-Mysore metre gauge section of Southern Railway, no staff were exchanging alight signals with the train crew from the side opposite the station platform in violation of Railway Board's orders issued *vide* No. 77/Safety (A&R)/29/27 dated 4-4-79. Some of the concerned officers of the Mysore Division were also not clear in their minds as to the need for exchanging alight signals in the manner prescribed.

(ix) At Asarananda and Jodhpur stations of Northern Railway, correction slips were not found pasted in the G&SR books. There was a shortage of Correction Slips to the Rule books of Moradabad station (Northern Railway); at Janghal station of this Railway, 7 correction slips had already been issued to the Station Working Rules, whereas according to the Rules, these should have been revised after the issue of 3 correction slips. At Langtang station on the Northeast Frontier Railway, one Cabinman had been working for about 10 years without having recorded his assurance that he had read and understood the Station Working Rules.

(x) A Porter was found working as Leverman for over 10 hours at a stretch on various days in July 1981 at Pun Pun station of Eastern Railway. Assistant Station Masters working on the section Gooty-Nakkandoddi, though classified as 'Continuous', still continued to perform 12 hours 'Intermittent' shift duties.

4.8. Locomotive and Rolling Stock

(a) Driver's Vigilance Control Device (VCD) was out of commission in almost all the diesel locomotives examined e.g.—locomotives Nos. 17721 and 17702 of Tuglakabad shed which worked No. 123 Express on 6-9-81 were found with their VCDs out of order.

(b) Despite Railway Board's instructions, A-9 and SA-9 valves had not been synchronised on all the diesel locomotives, e.g.—(i) Loco No. 17346 WDM-2 of Ratlam Shed checked on 17-10-81. The VCD was also found dummied and there were repeated bookings of; ACD plunger pin found disconnected and Lube oil blowing from exhaust chimney.

(ii) Out of 57 WDM-2 diesel locos in Jhansi Shed, only 15 had the A-9 and SA-9 valves synchronised as on 17-11-81. There was shortage of main piston rings; bellow connectors; A-9/SA-9 valves and expressor Air Governor and unloading assemblies.

(c) (i) Loco No. 17332 WDM-2 working the Tuglakabad Shuttle had the following defects: speedometer not working; A-9/SA-9 valves not synchronised and VCD out of order.

(ii) Loco No. 7158 WP which hauled 8 Down Toofan Express on 17-10-81 had its speedometer out of order; the hand brake was not working; the right side big-end was knocking and both sides piston glands were blowing.

(d) Speed Recorder Charts were not being examined as they should be, to enable follow up action being taken against drivers found to be over-speeding.

(e) (i) Checks made at Jhansi, Central Railway; Bandra, Western Railway and Tuglakabad, Shakurbasti and Ghaziabad on Northern Railway in October and November 81 revealed that many wagons overdue POH were in service; some of them overdue for as long as 3 years.

(ii) Wagons with following defects were noticed to be running soon after being certified fit by the Train Examiner at Bandra Yard in the 2nd week of June 1981; free lift of 13 mm between Vacuum Cylinder cotter and brake shaft fork end arm not available; brake blocks below condemning size; shoe type brake blocks fitted with improper/wrong size keys; horn gap tie/bridle bars loose;; and lateral clearance between the axle guard and the axle box on 4 wheeler wagons more than 10 mm.

The following materials were also in short supply—syphon pipe clips; cotter No. 7; brake block cotter No. 718; brake gear fittings of IRS and bogie stock (like pull rod, push rod and connecting rods etc.); transition coupling clevis/clevis pin; and laminated springs for BOX/4 wheeler Wagons.

(f) (i) Inspection of the hump yard at Wadala of Central Railway showed that humping was performed without skids or retarders causing considerable damage to the goods stock, the serious ones being : head stock/underframe members damaged; pivot pin/bolt/ casting etc. damaged/bogie sole plate/horngap/transom damaged; end panel broken/bulged out; centre buffer coupler components damaged; and bearing springs broken/plate shifted.

There was shortage of spares at the Wadala Depot as follows: knuckle pin (Sk. No. 62721); clevis pin (Sk. No. 69508); knuckle 8" (Sk. No. 62723); piston rod cotter (Sk. No. VB-58); shackle stone (Sk. No. W-4741); pin for bearing spring shackle (Sk. No. W-4743); retainer for bearing spring shackle pin (Sk. No. W-4742); nuts M.S. 20 mm; bolts M.S. 100 × 20 mm; bolts M.S. 110 × 20 mm; bolts M.S. 110 × 22 mm; bearing spring 9 plated for CRT wagons; bearing spring 13 plated (Sk. No. WA-8); & bearing spring 10 plated for BOX wagons.

(ii) During inspections of Ghaziabad, Shakurbasti and Tuglakabad yards in the third week of October 1981, goods trains were found to be running with brake power of about 50% as against the stipulated 85%. The following defects were also noticed : track keys being used in place of vacuum piston rod pin/cotter; wagons running with brake blocks of condemning size; brake gear adjusting pin of non-standard size and without cotter or split pin; bearing spring eyes touching sole bar; axle guard and tie road rivets loose; vacuum cylinders inoperative; and shackle pin cotter non-standard/broken.

There was shortage of spares like : hose pipe clips; shackle pins; brake pull rod pins; vacuum cylinder piston rod cotter; brake block; brake pull rod; and BOX wagon spring.

(iii) Inspection of goods trains at Jhansi yard in the 3rd week of November showed that effective brake power was only 50%. The following deficiencies were noticed : brake gearing not adjusted properly; bearing spring eyes resting on sole bar; brake gearing holes oval; pins loose by more than 5 mm in many cases; axle guard legs shaking due to slack rivets and many axle guards bent outwards; buffer bolts missing and buffer dead.

The following items were in short supply at Jhansi depot : brake block (Pl. No. 37.14.1284); brake gear pin (Pl. No. 37.32.0877); clevis (Pl. No. 38.13.5000); shackle stone (Pl. No. 38.04.0207); brake gear pin (Pl. No. 30.32.6047); shackle pin retainer for BOX wagons (Pl. No. 38.04.0256); & hose pipe clips (P. No. 37.15.4242).

4.9. Measures for dealing with emergencies

(a) Out of 32 statutory inquiry Reports received in the headquarters office of the Commission so far, lack of despatch in turning out and working the Medical Relief Vans to sites of accident was commented upon in as many as 11 Reports.

(b) (i) Checks on the Northern Railway disclosed that the Medical Relief Vans were not being periodically inspected by the various Departmental Officers as per the schedule laid down.

(ii) A check of the Auxilliary Van stabled at Katihar Jn. of the Northeast Frontier Railway showed quite a few discrepancies in stocking and maintenance. It appeared that officers of the Mechanical Branch were not sure as to whose responsibility it was to maintain the Van.

(iii) Inspection of the Accident Relief Medical Equipment maintained at Mansi station on the North Eastern Railway revealed quite a few deficiencies both in Medicines and equipment.

(c) (i) 604 Passenger ex Barauni, checked at Katihar on 31-8-81, had no portable telephone, no fire extinguishers and no emergency train lighting equipment.

(ii) 124 Down Passenger inspected at Salmari on the Northeast Frontier Railway in August 1981 had no emergency lighting equipment and carried only one fire extinguisher. The same was the case with 12 Down Express seen at Silchar on 20-10-81, the only fire extinguisher available in the brake van appeared also to be defective.

(iii) The 'Madras-Dadar Express' which was examined at Madras on 14-5-81 had not been provided with portable telephone suitable for use in the electrified Madras-Tiruvellore section. The Guard had also not been given any training in the use of this equipment. This was not an isolated case as all the Guards working trains in that section appeared to be untrained and were not provided with the appropriate type of portable telephone.

(iv) Examination of the Lucknow Jn. station showed that items consumed in the First Aid Boxes were not being replenished in time. On 14-11-81, there were 4 such boxes with a depleted complement.

CHAPTER V

REMARKS ON CERTAIN SELECTED ISSUES BEARING ON SAFETY

5.1. End-to-end running of Goods trains without examination en route irrespective of the distance involved.

5.1.1. Vide para 5.1 of its Annual Report for 1980-81, the Commission of Railway Safety had commented on the inadvisability of running goods trains from end-to-end without any examination en route irrespective of the distance involved—a system which was initially introduced on one Railway and later extended to all Railways by the Railway Board in 1980. The Commission had emphasised that this radical change in train operation which had been put through without being backed by necessary inputs had grave repercussions on safety, particularly on the double line sections where a Goods train coming to grief on one line was likely to pose a hazard to the passengers travelling on the adjacent line (as evidenced by two of the serious collisions which occurred during 1980-81 entailing a heavy toll of lives). Accordingly, the Commission had recommended that the new system be kept in abeyance till such time as the repercussions were adequately examined and the requisite back-up fully built up.

5.1.2. The Railway Board, however, did not accept the Commission's advice and sought to justify the continuance of end-to-end running on the score that it had been resorted to only in cases of trains running in block rakes comprising wagons which had special design features like roller bearings, centre buffer couplers and slack adjusters. It was also mentioned that to facilitate the safe running of such trains, instructions had been issued to bestow particular attention on specific items during the intensive examination of the trains and it was felt that with such steps their safe running had not been jeopardised. It was brought to the notice of the Ministry of Railways that the results of inspections carried out by the officers of the Commission had disclosed several shortcomings in the operation of these trains and in the light of these and other aberrations revealed during inspections and inquiries, the Commission was unable to agree that their safe running had in no way been jeopardised and considered that with the existing infrastructural framework and inputs, the system of end-to-end running of goods trains without any intermediate examination was fraught with danger. Further inspections carried out by the Commission have revealed that there is no appreciable improvement in the state of maintenance of these trains and serious deficiencies such as: inadequate brake power (as low as 43% after a run of about 300 Kms only and even less at the originating station, showing that either the certification of 85%—the stipulated minimum—at the originating station was incorrect, or the brake fade was excessive), defective brake adjustment, non-standard and missing fitments (split pins/cotters), bearing spring plates shifted/cracked, drooping buffers, loose axle guards, wagons grossly overdue periodic overhaul being in use (in one case a wagon which was due POH in July 1979 was in service), shortage of essential spares in Maintenance Depots etc., continue to subsist. The Commission therefore reiterates that in the prevalent conditions examination (and certification) of such goods trains, at intermediate stations should continue to be done as in the past.

5.2. Continued Use of Wagons Overdue Periodic Overhaul (P.O.H.)

5.2.1. The disturbing feature of goods stock grossly overdue POH being continued in service was commented upon in para 5.10 of the Annual Report on the Working of the Commission of Railway Safety for the year 1976-77. In its Report for 1973-74, the Commission had remarked on the undesirability of the Railway Board's proposal to increase the interval between the POH of wagons. Despite the schedules for POH in vogue till 1973 having been increased for certain types of wagons, instances of stock overdue POH continuing to be in operation have been galore. Recently in March 1982, instructions were issued by the Railway Board that wagons fit for service on *normal train examination* should be allowed to continue in service *irrespective of the return dates*.

5.2.2. The Rules for maintenance, examination and interchange of goods stock on Indian Railways are contained in the Conference Rules Part III, relevant provisions of which are recalled hereunder:

(i) Rule 2.1 lays down that all goods stock owned by individual Railways shall be periodically overhauled at prescribed intervals. These intervals are set forth in Rule 2.4.3:

(ii) Rules 3.13.1 and 3.13.2 lay down the date from which the wagon should be considered due overhaul and the procedure for despatching such wagons to workshops of the owning Railways;

(iii) Rule 4.14 prohibits moving of overdue periodical overhaul wagons in any direction other than the owning Railway, except when exempted under orders issued by the General Secretary, IRCA; and

(iv) Appendix 'C'—1.2 permits an overdue POH wagon in interchange if it is loaded within one month from the expiry of the return date, only in order to avoid transhipment.

5.2.3. It would thus be seen that the current instructions of the Railway Board not only infringe the Conference Rules but also compromise the safe operation of trains, particularly in the context of the prevalent standards of inspection and maintenance of goods stock which has not been up to the mark—a fact adequately highlighted by the Commission from time to time.

5.2.4. It needs no gainsaying that the overhaul of goods stock at periodic intervals has been prescribed based on experience over a period of time, in order that a detailed examination of all the parts could be carried out and necessary replacements/repairs effected so that the stock is rendered fit for continued service for a further period upto the next periodic overhaul. Obviously, during a normal train examination a detailed check of all the moving/wearing parts is not possible. This apart, the instructions of the Railway Board are likely to give rise to a feeling amongst the concerned staff that the requirements of safety could be relegated to the background in the pursuit of means to attain increased productivity.

5.2.5. While the Commission appreciates that with the constraints which the Indian Railways are faced, it may be unavoidable to allow in service a small percentage of wagons overdue POH, the continuance of such wagons should only be on the basis of examination/certification at the gazetted level and not on routine inspection by the Train Examiners. Also, any relaxation in the use of such wagons should be only for a limited period not exceeding one year during which time the infra-structure for POH should be fully augmented and geared up to meet all the arisings.

The Commission has already communicated these views to the Railway Board with the request that revised instructions may be issued to Railways keeping the requirements of safety in view. The Railway Board's response is awaited.

5.3. Inadequacy in the ultrasonic testing of axles

5.3.1. A number of cases of breakage of axles have come to light where the origin of cracks was at locations which could not be detected during the ultrasonic testing in Workshops with cylindrical probe. At present no facility exists in the Shops for conducting angular probes to detect such cracks. It is understood that according to a decision taken by the Railway Board on the minutes of the Chief Mechanical Engineers' Conference held in February, 1982, ultrasonic testing of axles is to be confined to cylindrical probes only. The circumstances leading to this decision are not known to the Commission. Whatever they be, the Commission considers it essential that the facility for conducting *angular probes* should also be provided in Workshops to detect all such cracks, which if left unexposed are likely to develop and create unsafe conditions.

5.4. Non-renewal of rails having major flaws on the GT Route

5.4.1. The inadequate attention to the track structure on the trunk routes was commented upon in para 5.2 of the Commission's Annual Report for 1980-81. It was pointed out therein that apart from the track renewal works being in arrears even on the Rajdhani route (leading to the increase in the incidence of rail fractures ultrasonic testing of rails over 10 years old was not being carried out at the stipulated intervals on the GT route of the South Central Railway (in contravention of the condition attendant on the sanction communicated by the Commission for the operation of high speed trains). The Railway Board had then advised that steps were being taken to pull up the arrears of track renewals and that the position of renewals would improve in 1982-83. It was also mentioned that instructions had been issued for the strict compliance with the requirements of ultrasonic testing of rails over 10 years old.

5.4.2. Another disturbing feature which has since come to light is the inability of the South Central Railway Administration to replace for long periods rails known to be having major flaws when tested with ultrasonic flaw detectors, thus introducing a significant element of hazard in rail operations. (The prestigious 'Golconda Express' met with an accident on the Vijayawada-Kazipet section on 17-12-81 due to a rail fracture and it was fortuitous that the mishap did not result in fatal casualties). According to information received by the Commission, out of 2429 rails with major flaws detected in the Vijayawada-Kazipet section since 1980, over 1000 rails were still to be replaced as on 31-3-82. This is a distressing situation. The Commission suggests that the position obtaining on other Railways may also be checked by the Railway Board and steps taken to remedy the same at the earliest.

5.5. Accountability of Supervisory categories for infractions and for implementation of instructions/directives bearing on safety.

5.5.1. A feature which has repeatedly come to the notice of the Commission in the recent past is the apparent non-accountability of the supervisory categories for the infractions committed in the areas of activity under their charge and for the implementation of the instructions/directives bearing on safety issued by the Safety Controlling Authority. While the attempt generally of Railway Administrations has been to assign the responsibility for omissions to the staff at lower levels, the Commission is of the considered view that unless the accountability for lapses is identified and apportioned also to the appropriate supervisory level irrespective of the status of that level in the hierarchy, the quest for higher standards of safety would not be a meaningful exercise. To this end, the Commission suggests that accountability of supervisory officials for the shortcomings noticed in the spheres of operation under their control as also their accountability for implementation of safety directives should be clearly defined and monitored. The Commission has already highlighted this aspect in its inquiry reports on the collision accidents which took place on the Southern and South Central Railways in February 1981, August 1981 and October 1981. It is being reiterated herein for Railway Board's close attention.

5.6. Tardy progress in the provision of track-circuits on run-through lines at stations on Trunk Routes and Main Lines.

5.6.1. Arising out of correspondence between the Commission and the Railway Board, instructions were issued to Railways as far back as 1966 to programme the track-circuiting of run-through lines at way side stations between Fouling Marks and the Commission was advised that a target of 200 stations per year was being set. Later, pursuant to the Commission's recommendation in an accident inquiry report, instructions were issued by the Railway Board vide letter No. 70/Safety (A&R)/2/11 dated 15-12-1970 that the track-circuiting on run-through lines should be extended upto block section limits at those stations where the incidence of shunting involving main lines was heavy; subsequently a target of 100 stations was indicated under Railway Board's letters Nos. 70/Safety(A&R)/2/11 dated 11-9-1971 and 25-12-1971. Following the Commission's report on the disastrous Collision between No. 103 Up 'Howrah-Amritsar Deluxe Express' and a Goods train at Naini station on the Allahabad Division of Northern Railway, the Railways were directed vide letters No. 77/W3/W/5/3 dated 18-11-77 and 28-8-78 that the facility of extension of track-circuiting from Fouling Mark to Block Section Limit should be provided at stations on the trunk and main line routes which satisfy one or more of the following criteria :

- (i) Trains run through the stations without stopping at the maximum permissible speed;
- (ii) Frequent shunting involving main lines is carried out at the station;
- (iii) The lay-out of the station permits a train to be kept waiting at the Advanced Starter, clear of the trailing points in rear, permitting reception on the main line from the rear; and
- (iv) The station is already provided with track-circuiting on run-through lines from Fouling Mark to Fouling Mark.

The above instructions were reiterated *vide* letter No. 77/W3/SG/W/5/3 dated 16-2-81.

5.6.2. It is a matter for concern that despite the subject having been under active pursuit since 1966, the progress achieved so far in implementing this much-wanted safety measure has been totally inadequate. According to information available with the Commission the position in respect of some of the Railways as on 31-3-82 was as follows:

	No. of stations	Completed	Number in Progress	Yet to be Programmed
Northern Railway	151*	9	49	93
Southern Railway—Trunk Route	142	63	29	50
Important Main Line	75	23	19	33
South Central Rly.—Trunk Route	187	17	47	98
Important Main Line	52	8	8	36
South Eastern Rly.	232	46	—	186
Western Railway }	150	64	11	(23 Programmed) 75 (21 programmed in 1982-83)
" "	4*	—	—	4 (2 programmed in 1982-83)

*At all these stations the Advanced Starter is located at a full train length+overlap i.e., about 670 metres from the trailing points.

5.6.3. Keeping in view the need to complete the implementation of this safety scheme with the utmost expedition, the Commission emphasizes that the Railway Board should endeavour to obtain and make available the requisite funds by taking up the matter with the Government at the highest appropriate level.

5.7. Delay in the provision of complete track circuiting at stations provided with panel Interlocking.

5.7.1. In terms of Railway Board's letter No. 76/Safety-1/3/23 dated 16-4-79, all fresh proposals for the provision of centralised operation of points and signals should cater for the complete track circuiting of the station section either by provision of conventional track circuiting or by provision of axle counters. At stations already commissioned without the provision of this facility, the Railways were instructed to provide the same *on top priority on out of turn basis*, so that all the stations are provided with this aid at the earliest. It was also stipulated in this letter that at stations where the panel interlocking had been provided without complete track circuiting, adequate transportation staff should be provided/retained where warranted to enable compliance with the General and Subsidiary Rules 36, 37 & 38. in particular the verification of line clearance, setting and clearance of points during shunting, etc.

5.7.2. It has come to the notice of the Commission that requisite action to comply with the instructions referred to above have not been taken on many Railways. Referring to one such Railway—the Northern Railway, it came to light during the statutory inquiry into a collision accident which occurred on the Delhi Division in July 1979, that the implementation of Railway Board's instructions mentioned above was still in the *review stage* and the adequacy of existing transportation staff had neither been verified nor had additional transportation staff been brought into position. Out of 50 panel interlocked stations currently in service without complete track circuiting, only 18 had been programmed for undertaking the work in the near future and for the balance 32 even such a programme had not been made out.

5.7.3. On the South Eastern Railway, out of 65 panel-interlocked stations only 27 had been equipped with complete track circuiting and 6 were said to have been programmed, leaving 32 stations as such. The position obtaining on other Railways may not be any more encouraging. The Railway Board may have this matter examined and take steps for the expeditious provision of this safety aid at such panel interlocked stations which are still without this facility.

5.7.4. In order that the available resources may not be utilised for commissioning new works leaving the existing ones in the same incomplete state, the Commission suggests that no new works of panel interlocking should be programmed until the complete track circuiting of the station section upto the block section limits at all the stations commissioned earlier without this facility is finished.

5.8. Lack of despatch in planning and implementing safety works on the Indian Railways.

5.8.1. Pursuant to the recommendations made by the Commission, instructions have been issued by the Railway Board from time to time for the planning and implementation of several schemes/works designed to enhance the element of safety in train operations. It is a matter for regret that the pace of implementing such safety schemes has been inordinately slow. As an example, the position obtaining on one of the Railways, viz., the South Eastern Railway in respect of some of the safety works is detailed hereunder:

(i) The provision of one slot one Starter system (Reference Railway Board's letter No. 77/W3/SG/G/9 dated 23-5-78)—The South Eastern Railway has neither provided nor programmed this work at any of the 163 stations where it is required.

(ii) Provision of Station Master's Control on the Last Stop Signal (Reference: Railway Board's letters Nos. 78/Safety(A&R)/2 dated 15-2-79 and 69/W3-SG-SM-1 dated 10-9-79 for double lines)—Out of 268 stations on this Railway, no station has yet been provided with this Control and only 58 stations have been programmed for this provision. Turning to another Railway—the Northern—the Station Master's Control over the Last Stop Signal exists at only 21 stations even on the Rajdhani Route, leaving 79 other stations on this route without this facility.

(iii) Automatic replacement of Main Line Starters on double lines (Reference : Railway Board's letter No. 77/W3/SG/G/9 dated 23-5-78)—Out of 302 stations on the South Eastern Railway only 34 stations have this provision; of the balance 268 stations a programme has been made out for 114 stations, and work is in progress on some, leaving a balance of 154 stations still to be tackled.

5.8.2. Railway Board are aware that such important works which have a vital bearing on safety should receive urgent consideration and be executed within the shortest time-span. The progress currently achieved by the Railways in this regard is rather disheartening and early steps need to be taken to accelerate the pace.

5.8.3. While on the subject, attention is also invited to para 4.4.(a) of this Report, regarding provision of safety devices at Level Crossings.

5.9. Inadequate progress in the provision of the Automatic Warning System (AWS) on the Indian Railways.

5.9.1. The question of installing the Automatic Control/Warning System on the high density routes of the Indian Railways, starting with the busy suburban sections where the failure of the human element is likely to result in highly disastrous consequences, has been under correspondence between the Commission of Railway Safety and the Railway Board since long and has featured in many of the Commission's Inquiry Reports. The Commission had been assured on more than one occasion that this work was being progressed in a phased manner with the following priorities:—(i) Suburban sections (ii) Trunk routes where the speed of trains exceeds 120 Km/h; and (iii) Other trunk routes/main lines. As late as June/October 1980, the Commission had been advised *vide* Railway Board's O.Ms. No. 79/Safety(A&R)/1/15 dated 18-6-80 and 1/27 dated 13-10-80 that the provision of the AWS had been sanctioned for the Howrah-Mughalsarai and Mughalsarai-Delhi sections on the trunk route and for the suburban sections of the Western and Central Railways and that the survey was in progress for the installation of the AWS on the suburban section of the Southern Railway and the Howrah-Kharagpur section of the Eastern Railway.

5.9.2. Inspections and discussions with the Railway Officials reveal that except for portions of the Howrah-Mughalsarai section where the performance of the installed system has not been satisfactory and the suburban section of the Western Railway where the work has been started, there has been no progress elsewhere. Even the work sanctioned for the suburban section of the Central Railway has not been taken up.

5.9.3. Apart from the Commission, the urgency of such provision was also highlighted by the Railway Accidents Inquiry Committee—1968 (Recommendations No. 148 & 149 of Part-II) and the Railway Accidents Enquiry Committee—1978 (Paras 389 to 392 of Part-I and Recommendation Nos. 153 to 156 of Part-II). The Automatic Warning System, although it is a diluted version of the Automatic Train Control System, is a vital safety device designed to compensate for the inherent fallibility of the human element which has been the largest single factor in the causation of collision accidents. As such, the need to plan, undertake and progress this scheme with the utmost despatch is imperative and is being emphasized again.

5.10. Diversion of coaches meant for replacements for starting new services or for augmenting the capacity of existing ones.

5.10.1. The absence of adequate facilities for maintenance of coaching stock at terminal stations and the gradual erosion that has set-in in the standards of up-keep of high speed rakes was commented upon in the Commission's Annual Reports for 1979-80 and 1980-81 (paras 5.4 and 5.8 respectively). Two significant suggestions were also made in that connection—(i) Funds for this purpose which now form part of the overall funds allotted for 'Workshops' be segregated and solely earmarked for these facilities; and (ii) Till such time as the existing infra-structure is adequately strengthened, no additional train services be introduced.

5.10.2. A disquieting feature which has come to notice in this context is the utilisation of coaches obtained for replacement of overaged stock (and to make up the required quota of maintenance spares) for augmenting the loads of some of the existing trains. While the capacity for production of coaches in the country is known to be hardly adequate to meet the requirement of replacements utilisation of receipts from Coach Factories for increasing the capacity of existing trains would mean the deferment of the much-needed renewals leading to over-aged and over-due POH coaches continuing to remain in service and also cut into the small stock of spares so vital to keep the existing services going in a safe manner. The Commission cautions the Railway Ministry against undertaking any such diversion at this stage leading to curtailment in the scope of essential replacements which are already in arrears, as this would have grave repercussions on safety.

5.11. Departure from the accepted policy on fixation of booked speed in relation to the maximum permissible speed.

5.11.1. The accepted policy of the Indian Railways has been to fix the booked speeds of trains at 8-12% lower than the maximum permissible speeds (refer Ministry of Railway's views on para 31(ii)(a) & (b) of Railway Accidents Committee—1962's Report, Part—I). Reckoned on this basis, the booked speed of 110 Km/h, trains should have been fixed at 100 Km/h. However, the Railway Board *vide* their letter No. 71/TT-4/2/3 dated 7th October 1971 decided, despite the Commission's objections, to permit a booked speed of 105 Km/h for such trains. The stand taken by the Railway Board then was : that all Mail and Express trains had been provided with speedometers, were invariably manned by selected and highly experienced drivers who could be reasonably relied upon to ensure that the prescribed speed limits were not violated; and since the track, locomotives and coaches had been cleared for a speed in excess of 110 Km/h, occasional overstepping of the 110 Km/h limit would not jeopardise safety in any way. Experience has shown that the premises relied upon by the Railway Board have turned out to be untenable. The circumstances brought to light in some of the recent accident reports bear this out.

5.11.2. Considering the standards obtaining at present in the upkeep of track, speedometers-cum-speed recorders, locomotives and coaches, the prevalent inadequacy in the machinery for monitoring the speeds of trains etc., the Commission is of the view that there should be no departure from the accepted principle of providing a margin of 8-12% between the maximum permissible and the booked speeds, and suggests that the increased booked speeds wherever now permitted may be reviewed and reduced to a level corresponding to 8-10 per cent below the maximum permissible speed as has been the practice in the past.

These views have been separately communicated to the Railway Board in connection with the running of WAP-I locomotives and the introduction of air-braked 'Rajdhani Express' between New Delhi and Bombay Central.

LUCKNOW

Dated : 28-12-1982
7-2-1983

(Sd.)

(P. M. N. MURTHY)

Chief Commissioner of Railway Safety.

[NOTE.—Please see Annexure III for Railway Board's Comments.]



ANNEXURE I

(Refer para 1.2 of Report)

Commission of Railway Safety—History, Functions and Creation of additional Circles and the Technical Wing.

Brief history

1.1 (a) To exercise effective control over the construction and operation of the first railways in India, which were entrusted to private companies incorporated in United Kingdom. Consulting Engineers were appointed under the Government of India. Later, when the Government undertook the construction of railways, the Consulting Engineers were designated as Government Inspectors. In 1883, their position was statutorily recognised. Two decades later, the Government Railway Inspectorate so called, was placed under the Railway Board which was established in 1903.

(b) Under the Indian Railway Board Act, 1905 and Notification No. 801 dated 24th March, 1905 of the Department of Commerce and Industry, the Railway Board is vested with powers and functions of the Central Government under various sections of the Indian Railways Act, 1890, in respect of all Railways in India and is authorised to make General Rules for the operation of Railways. The Railway Board is, thus the Safety Controlling Authority for the working and operation of Government and Company-managed railways.

(c) Section 181(3) of the Government of India Act of 1935 provided that "functions for securing the safety both of the members of public and of persons operating the railways including holding of inquiries into the causes of accidents should be entrusted to officers independent of the Federal Railway Authority."

To avoid direct subordination of the Railway Inspectorate to the Railway Board, the Pacific Locomotive Committee, headed by Lt. Col. A.H.L. Mount, then Chief Inspecting Officer of the British Railways, suggested in para 210 of their report of 1939:

"We understand that, under the Govt. of India Act, 1935 it is contemplated that the Inspectorate will be separated from the control of the Railway Board. This is very desirable in so far as it will eradicate the present anomaly of the Board being the Inspecting as well as the Executive Authority. We were informed that the Board fully appreciate the position, and would welcome the change, although it appears that, in practice, Government Inspectors have generally retained their freedom of judgement.....".

The principle of separation of the Railway Inspectorate from the Railway Board was endorsed in 1940 by the Central Legislature who recommended that "Senior Government Inspectors of Railway should be placed under the administrative control of some authority of the Government of India other than the Railway Board". Accordingly, the Railway Inspectorate was placed under the administrative control of the Department of Posts & Air, thereafter under the Ministry of Transport and Communications. The administrative control over the Railway Inspectorate, which was redesignated as the Commission of Railway Safety on 1st Aug. 1966, is exercised by the Ministry of Civil Aviation since May, 1967.

(d) The responsibility for safety in the working and operation of Railway rests solely with the Railway Board and the Zonal Railway Authorities.¹ The main task of the Commission of Railway Safety is to direct, advise and caution the Railway Executive with a view to ensure that all reasonable precautions are taken in regard to soundness of rail construction and safety of train operation. The Railway Board refers to the Commission matters relating to modification or enhancement of standards in respect of operation of trains, track, locomotive, rolling stock and signalling embodied in the General Rules, Rules for opening of New Lines Manuals, IRCA Regulations, Schedules of Dimensions and other publications. Suggestions made by the Commission of Railway Safety are duly considered by the Railway Board before necessary revisions are notified.

Functions

1.2 (A) The principal functions of the Commission of Railway Safety are:—

- (i) Inspection of new Railway Lines prior to authorisation for passenger traffic.
- (ii) Periodical Inspection of Open Lines.
- (iii) Approval of new works and renewals affecting passenger carrying lines.
- (iv) Investigations into accidents, including inquiries into such accidents to passenger trains as are considered to be of a serious nature.
- (v) General advice on matters concerning safety of train operation.

(B) Statutory powers of the officers of the Commission of Railway Safety, and facilities to be afforded by Railways are specified in Sections 4 to 6 of the Indian Railways Act, reproduced below:—

"Section 4:—

- (1) The Central Government may appoint persons by name or by virtue of their office, to be Inspectors of Railways.

(2) The duties of an Inspector of Railways shall be:

(a) to inspect railways with a view to determine whether they are fit to be opened for the public carriage of passengers, and to report thereon to the Central Government as required by this Act;

(b) to make such periodical or other inspections of any railway or of any rolling stock used thereon as the Central Government may direct;

(c) to make inquiry under this Act into the cause of any accident on a Railway;

(d) to perform such other duties as are imposed on him by this Act or any other enactment for the time being in force relating to Railways.

Section 5:—

An Inspector shall, for the purpose of any of the duties which he is required or authorised to perform under this Act, be deemed to be a public servant within the meaning of the Indian Penal Code (45 of 1860) and, subject to the control of the Central Government, shall for that purpose have the following powers namely:—

(a) to enter upon and inspect any railway or any rolling stock used thereon;

(b) by an order in writing under his hand addressed to the railway administration, to require the attendance before him of any railway servant, and to require answers or returns to such inquiries as he thinks fit to make from such railway servant or from the railway administration;

(c) to require the production of any book or documents belonging to or in the possession or control of any railway administration (except a communication between a railway company and its legal advisers) which it appears to him to be necessary to inspect.

Section 6:—

A railway administration shall afford to the Inspector all reasonable facilities for performing the duties and exercising the powers imposed and conferred upon him by this Act.”

(C) The duties under sections 4(2)(a) & 4(2)(b) of the Indian Railways Act have been detailed in succeeding Sections 17 to 20 and 22 to 24. These are:—

(i) to sanction the opening of new railway lines after inspection on behalf of the Central Government;

(ii) to inspect a railway or a part of it and submit a detailed inspection report to the Central Government;

(iii) to sanction the execution of all works, including new works, affecting the safety of running lines;

(iv) to report to the Central Government any condition which may endanger the safety of travelling public and make recommendations;

(v) to inspect a closed railway prior to its re-opening.

(D) Functional duties, including field inspections, of an Inspector of Railway, since designated as Commissioner of Railway Safety, are amplified among other technical publications, in the:

(i) General Rules for all open lines of railways in India administered by the Government;

(ii) Rules for opening of a Railway or Section of a Railway for the public carriage of passengers;

(iii) Indian Railway Code of practice for Engineering works;

(iv) Indian Railways Way & Works and Signal Engineering Manuals;

(v) Schedules of Dimensions;

(vi) Indian Railways Conference Association Regulations;

(vii) Statutory Investigation into Railway Accidents Rules, 1973.

The Commissioner of Railway Safety is thus responsible for the day to day sanctions he accords to works affecting the safety of the running road, for dispensations agreed to under approved special instructions” after due examination of each application, and for detailed Reports of Inspections of Open Line Sections, of New Lines, Conversions, Sections doubled, tripled or quadrupled, of Electric Traction and so on.

(E) After its separation from the Railway Board in May, 1941 a post of Chief Government Inspector of Railways, later designated as Chief Commissioner of Railway Safety was created to enable the Ministry, under which the Railway Inspectorate was placed to exercise "effective technical control".

The Chief Commissioner of Railway Safety directs the technical activities of the Organisation and is responsible for advising the Controlling Ministry in matters relating to recruitment of officers, postings and promotions, budget and expenditure, etc. The Chief Commissioner deals principally with:—

- (i) Matters appertinent to Field Inspections and statutory inquiries into accidents;
- (ii) Inspection Reports of Commissioners of Railway Safety;
- (iii) Reports of statutory inquiries held into Accidents by the Commissioners. After careful study he forwards his considered opinion to the Controlling Ministry and the Railway Board with such recommendations as he feels are necessary;
- (iv) Railway Board's suggestions pertaining to corrections or amendments to General Rules, Rules for Opening of a Railway, Schedules of Dimensions, the Way and Works and Signal Engineering Manuals, Procedures for inquiries into accidents, Codes of Practice for Engineering Work and other publications;
- (v) Preparation of Annual Report on the working of the Commission of Railway Safety.

Field duties of the Chief Commissioner of Railway Safety consist of inspections of sections of Railways, visits to the Railway Headquarters and Divisional Offices, Railway installations and Circle Offices. If considered necessary, he holds inquiries into accidents of an important nature.

Creation of Additional Circles and the Technical Wing

1.3(a) Prior to February, 1960, the organisation consisted of 4 Circles—Northern, Eastern, Southern and Western. On account of development works under the Five Year Plans, the work load increased very considerably, specially in the Eastern Circle which included the Eastern, South Eastern, a portion of North Eastern and North East Frontier Railways aggregating to 14,465 route kilometres as on 31-3-60. An additional Circle known as 'Construction Circle' was, therefore, created on 1-3-60 based at Calcutta, to deal with major projects, the electrification on the Eastern and South-Eastern Railways and the new Dandakaranya-Bolangir-Kiriburu Railway construction.

(b) On account of considerable increase in work load, the Circles were re-organised from 11th April 1968. With this reorganisation of the jurisdictions, the construction Circle was renamed as South Eastern Circle and Eastern as North Eastern Circle both headquartered at Calcutta.

Pursuant to the recommendations of the Railway Accidents Inquiry Committee 1962, two more Circles of Inspection called the Central Circle and North Eastern Circle, located at Bombay and Gorakhpur respectively, were created in 1972. The Central Circle started functioning w.e.f. 2nd February 1973, and the North Eastern Circle from 21st April, 1973. The erstwhile North Eastern Circle headquartered at Calcutta was renamed as Eastern Circle.

(c) Pursuant to the recommendations of the Railway Accidents Committee 1962, a "Technical Wing" was set up—

"..... to help the Commissioner and the Additional Commissioners (since redesignated as Chief Commissioner and Commissioners of Railway Safety, respectively) of Railway Safety to carry out..... inspections and Audit checks on the quality and standard of maintenance of locomotives, rolling stock, state of equipment, safety aspects of actual practices followed by railways and observance of rules and regulations affecting the safe operation of railways."

Four posts of Deputy Commissioners of Railway Safety drawn each from Signal & Telecommunication, Electrical Traction, Mechanical Engineering and Operating Departments of the Railways were accordingly created.



ANNEXURE II

(Refer para 3.2.3 of Report)

Statutory Inquiries—Rules, Procedure and Scope

1. Rules

1.1(a) Rules for guidance of the Officers of the Commission of Railway Safety for holding inquiries into Railway accidents are contained in the "Statutory Investigation into Railway Accidents Rules, 1973" notified by the Ministry of Tourism and Civil Aviation and corrected vide correction slip No. GSR 20.

According to the requirements of the "Railway (Notices of and Inquiries into Accidents) Rules, 1973" notified by the Ministry of Railways (Railway Board), all accidents as described in Section 83 of the Indian Railways Act are reported. As per explanation below clause 3 of the Rules these accidents include:—

".....Accidents of a description usually attended with loss of human life are meant to include all accidents to passenger trains like collisions, derailments, train-wrecking or attempted train wrecking, cases of running over obstructions placed on the line, of passengers falling out of trains, or of fires in trains, in which no loss of life or grievous hurt as defined in the Indian Penal Code, (hereinafter referred to as the grievous hurt) or serious damage to Railway Property of the value exceeding Rs. 1,00,000 has actually occurred but which by nature of the accident might reasonably have been expected to occur; and also cases of land slides, or of breaches by rain or flood, which cause the interruption of any important through line of communication for at least 24 hours".

(b) The relevant portions of para 2 of Statutory Investigation into Railway Accidents Rules, 1973, are reproduced below:

"2(2)... Every accident to a train carrying passengers which is attended with loss of human life, or with grievous hurt as defined in the Indian Penal Code to a passenger or passengers in the train or with serious damage to railway property of the value exceeding one lakh rupees and any other accident which in the opinion of the Chief Commissioner of Railway Safety or the Commissioner of Railway Safety requires the holding of an inquiry shall be deemed to be an Accident of such a serious nature as to require the holding of an Inquiry.

2(3) Where the Chief Commissioner of Railway Safety considers the holding of an Inquiry into an accident necessary, he may either hold the inquiry himself or direct the Commissioner of Railway Safety to do so.

Explanation--The Inquiry under this rule shall be obligatory only in those cases where the passengers killed or grievously hurt were travelling in the train. If a person travelling on the foot-board or roof of a passenger train is killed or grievously hurt or if a person is run over at a level crossing or elsewhere on the railway track, an inquiry under this rule shall not be obligatory. Similarly, if in a collision between a road vehicle and a passenger train at level crossing, no passenger in the train is killed or grievously hurt, it shall not be obligatory to hold an inquiry. For the purpose of this rule, workmen's trains or ballast trains carrying workmen shall also be treated as passenger trains and in the event of a workman getting killed or grievously hurt as a result of an accident to the train, an inquiry under this rule shall be obligatory.

2(5) (a) If, for any reason, the Commissioner of Railway Safety is unable to hold an inquiry at an early date after the occurrence of such an accident, he shall inform the Head of the Railway Administration concerned and the Railway Board accordingly and he shall also inform the Chief Commissioner of Railway Safety of the reason why an inquiry has not been held by himself.

2(5)(b) On the receipt of the proceedings of the joint inquiry (inquiry made by a Committee of Railway Officers) from the Head of the Railway Administration in accordance with rule 15 of Railway (Notices of and Inquiries into Accidents) Rules, 1973, the Commissioner of Railway Safety shall scrutinise the same and in case he agrees with the findings of the joint inquiry, shall forward a copy of the report to the Chief Commissioner of Railway Safety alongwith his views on the findings and recommendations made. If, on the other hand, the Commissioner of Railway Safety, after examination of the joint inquiry proceedings, considers that an inquiry should be held by himself, he shall, as soon as possible, notify the Chief Commissioner of Railway Safety, the Railway Board and the Head of the Administration concerned, of his intention to hold an inquiry and he shall at the same time fix and communicate the date, time and place for the inquiry."

2. Scope

2.1 The Commissioner holds inquiries into accidents with a view to ascertaining the cause and fix the responsibility thereof on the individuals concerned. Investigations are also carried out into the question as to whether prompt and adequate steps were taken by the railway administration for relief measure, e.g. first aid, medical treatment, refreshments, evacuation of injured passengers and facilities given to passengers such as arrangements for transhipment, completion of their journey to destination, running of duplicate trains, etc. As a result of his inquiry, the Commissioner also makes

certain recommendations which are designed to prevent a recurrence of similar accidents, e.g. new rules or equipment for ensuring safety, improved standards of signalling, construction, operation and maintenance of track, bridges etc. He also comments on matters observed by him during the course of his inquiry which may not have any direct bearing on the cause of the accident under investigation but generally affect the safe working of the railway and may cause accidents.

3. Procedure

3.1(a) Under the Statutory Investigation into Railway Accidents Rules, 1973 the Commissioner of Railway Safety on receiving intimation of the occurrence of a serious accident proceeds to the site by the quickest possible means and records all particulars, after careful inspection, before according sanction to the Railway for clearance of wreckage and restoration of the lines. He then carries out tests as required and records evidence. The emphasis has necessarily to be on the material and circumstantial evidence at site, which in almost all cases leads to the determination of the cause or causes.

(b) Officers of the local magistracy and police are advised of the inquiry and may attend the same. The press and the public are not admitted to the Commissioner's inquiry. The public, is however invited through the press and the radio to give evidence at his inquiry in the capacity of witnesses.



ANNEXURE III

Remarks of the Ministry of Railways (Railway Board) on Chapter V of the Report communicated vide Railway Board's OM No. 82/Safety (A&R)/11/1 dated 7-2-1983 which was received in the office of the Chief Commissioner of Railway Safety at Lucknow on 14-2-83.

Para 5.1 (End-to-end running of goods trains without examination enroute irrespective of the distance involved.)

5.1.1 No comments.

5.1.2 The safety aspects in the end-to-end running of trains always attract the railway Board's attention and all measures are adopted to ensure safety of trains. Only Jumbo and BOX rakes fall in this scheme (which consist of the wagons which have special design features like roller bearings, centre buffer couplers and slack adjusters).

CCRS's further remarks

The Railway Board's comments do not adequately cover the issue raised by the Commission in para 5.1.2.

Para 5.2.: (Continued use of wagons overdue periodic overhaul (P. O. H.)

5.2.1 The wagons are continued in service beyond the return date only if their condition permits and that too after thorough examination of the moving and wearing parts by competent supervisors, to ensure that the wagons are safe to run.

This practice has to be unavoidably resorted to, on account of inadequate shop capacity to undertake cent per cent POH of wagons. Suitable steps are being taken to tackle this problem, by way of increasing POH capacity.

5.2.2 No comments.

5.2.3 Board has no intention to infringe the Conference Rules: instructions are issued by the Board from time to time, to adhere to the rules. The deviation if any, is observed, is always within the safety margin.

5.2.4 The practice of detailed inspection of all the components and necessary replacement/repairs is existing in the workshops. The wagons which are continued in service beyond the POH period are given examination by competent supervisors in the open line and are not kept in service for an indefinite period, but are sent to workshops for POH at first available opportunity. In this way, both reliability and productivity are achieved.

5.2.5 Noted. This, in view of above, does not appear necessary.

CCRS's further remarks--

No comments have been offered by the Railway Board on the specific suggestion made in para 5.2.5 that the continuance of such wagons in service should only be on the basis of examination/certification at the gazetted level and not on routine inspection as per extant orders.

Para 5.3: (Inadequacy in the ultra-sonic testing of axles.)

5.3.1 Cent per cent axles are given ultrasonic testings in workshops during POH. Facilities for Angular Probing are also being created in shops in phases to detect the cracks at locations not coming in detection range of straight probes.

Para 5.4: (Non-renewal of rails having major flaws on the G.T. Route.)

5.4.1 Pace of Track Renewals has been stepped up. As stated earlier in 1981-82, 1270 kms. of primary renewals were done compared to only 880 kms. in 1980-81. On GT route of SC Railway, Track Renewals carried out during the last three years are as under:

	<u>1980-81</u>	<u>1981-82</u>	<u>1982--83 (Upto Dec. 82)</u>
Rail Renewal (KM)	45.13	52.84	51.99
Sleeper Renewals (KM)	12.57	64.62	45.20

It will be seen from the above figures that the pace of track renewals on G.T. Route has been considerably stepped up.

Ultrasonic testings of rails in track has also been accelerated during 1980, 1981 & 1982, the lengths of rails tested are 556 kms., 649 kms. and 602 kms. respectively. Detection and replacement of flawed rails is a continuous process. It is expected that there will be no arrears in regard to ultrasonic testing of rails by the end of current financial year.

5.4.2 Intensive efforts have been made to replace all rails from the track having major flaws. Supply of rails has been stepped up and it is expected that by 31-3-83 all rails with major flaws will be replaced. In cases where rails are not changed, fish-plates have been/will be provided as a precaution against failure of rails because of hidden flaws. Figures of rail fractures including weld failures on G.T. Route for the last 3 years indicate that the incidence of rail failures has reduced considerably during the last 1 year with the above measures. All efforts are being made to increase the supply of rails for replacing of flawed rails on all the railways.

Para 5.5 : (Accountability of Supervisory categories for infractions and for implementation of instructions/directives bearing on safety.)

5.5.1 Instructions have been reiterated to all the railways that the accountability of the supervisors for the commissions/omissions committed in the areas of activity under their charge and for non-implementation of the instructions/directives (having a bearing on safety) should be taken into account while investigating the causes of accidents/derailments by officers and responsibility fixed accordingly, and suitable action taken thereon. Supervisors in Engineering and Mechanical departments, which are mainly responsible for derailments are frequently taken up for their negligence and slack supervision.

Para 5.6: (Tardy progress in the provision of track-circuits on run-through lines at stations on Trunk Routes and Main Lines).

It has been possible to provide track circuiting at the rate of about 100 stations per annum and till March, 1982, 2437 stations have been provided with track circuiting on run-through lines at stations on trunk routes and main lines. Due to constraint of resources and short supply of wooden sleepers, it could not be possible to provide track circuiting at faster rate.

Axle counter has since been developed as an alternative to conventional track circuits. This system requires only a small quantity of wooden sleepers. The axle counter is being manufactured indigenously in the Railway workshops and efforts are being made to develop capacity in the private sector also for this item, to meet the short-fall. With the increased availability of axle counter, the progress of track circuiting works is expected to be stepped up, subject to the availability of funds. To give an idea about the financial implications, it is stated that nearly Rs. 300 crores outlay is required to complete the work of track circuiting on run through lines on the important sections.

Para 5.7: (Delay in provision of complete track circuiting at stations provided with panel interlocking.)

In terms of Board's letter No. 76/Safety-1/3/23 dated 16-4-79, all fresh proposals for provision of centralised operation of points and signals should cater for the complete track circuiting of the station sections either by provision of conventional track circuiting or by provision of axle counters.

As mentioned in para 5.6 above, shortage of funds has been the main constraint.

It is not practicable to accept Commission's suggestion that no new works of panel interlocking should be programmed until complete track circuiting of the station sections upto the block section limit at all stations commissioned earlier without this facility, is completed. However, instructions will be reiterated to the Railways to programme provision of track circuiting work on such of the stations on priority.

CCRS's further Remarks

The Commission is not in agreement with the Railway Board's views that the suggestion made in para 5.7.4 is not practicable. Allowing the stations where panel interlocking has already been commissioned without complete track-circuiting to remain as such, is tantamount to allowing the seeds of danger inherent in the working of those stations to continue to subsist.

Para 5.8: (Lack of despatch in planning and implementing safety works on the Indian Railways.)

Based on experience gained from accidents and recommendations of the CRSs in various accidents, instructions have been issued from time to time for providing certain safety features in signalling system in order to increase the element of safety and reduce dependence on human vigilance in ensuring safety in train operation.

(2) Provision of one-slot-one-train, Station Master's control on the last stop signal, automatic replacement of main line starters on double line, mentioned by CCRS in this para, are some of these features.

(3) Slow progress made by the Railways in this field is mainly due to shortage of funds. Out of 3276 stations on important routes, there are about 2000 stations where the safety features are yet to be provided. To obviate the need for repeated non-interlocked working for introducing various safety features, it is advantageous and economical to provide these features along with other major works, such as replacement works, doubling, conversion and R.E. works, and by doing so, the cost component of these safety features, works out to about Rs. 2 to 3 lakhs per station. Thus, the total requirement of funds works out to nearly Rs. 40 to 60 crores. If these works are executed separately, apart from other difficulties, like time required for non-interlocking, patch

work in interlocking, disconnection of gears etc. involved, the cost of these works also goes up considerably. In spite of efforts made by this Ministry, it has not been possible to get additional funds under the S&T Plan Head.

CCRS's further Remarks—

It is a matter for regret that paucity of funds continues to pose a restraint to the speedy execution of several safety works. In the circumstances, the promotion of higher standards of safety in rail travel may remain only a pious wish.

Para 5.9: (Inadequate progress in the provisions of Automatic Warning System (AWS) on the Indian Railways.)

The automatic warning system was introduced on Gaya-Mughalsarai and Howrah-Burdwan chord line sections on Eastern Railway. Due to heavy thefts of aluminium body magnets from the track, the system has proved unsatisfactory and has not served any purpose. It is, therefore, now proposed to try track magnets with fibre glass body to obviate thefts. The extension of the automatic warning system in other sections will depend on the successful functioning of the system having magnet with fibre glass body or other modifications, as may be warranted by the conditions obtaining in the country.

Para 5.10: (Diversion of coaches meant for replacements for starting new services or for augmenting the capacity of existing ones.)

5.10.1 Instructions have been issued to all the railways to create adequate facilities for maintenance of coaching stock at terminal stations to meet with the requirements of the station to deal with all the mail/express/passenger and high speed trains (required for maintaining safety standards.)

5.10.2 The views of the Commission would be given due consideration.

Para 5.11: (Departure from the accepted policy on fixation of booked speed in relation to the maximum permissible speed.)

In general, the Railways do follow a policy of providing adequate margin varying from 8 to 10 per cent between the booked and maximum permissible speed of trains. Deviations from this policy are made in exceptional circumstances on such trains where speedometers and highly experienced drivers are provided. Such exceptions are inescapable whenever provision of adequate margin involves considerable deceleration of train unacceptable to the public.

CCRS's further Remarks—

It has to be accepted that any process of providing a faster rail service to the public has to be entirely consistent with the requirements of safety and should include an adequate margin to allow for the known contingencies such as instrumental errors, errors in judgement, etc. The discerning public would undoubtedly be aware of this aspect and as such it is difficult to appreciate the view that 'exceptions are inescapable whenever provision of adequate margin involves considerable deceleration of train unacceptable to the public'.

[NOTE-The CCRS's further remarks have been separately communicated to the Railway Board with elaboration as necessary.]

(Sd.)
P. M. N. MURTHY
Chief Commissioner of Railway Safety



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APPENDIX A-1

List of New Railway Lines, Doublings, Diversions, Electrification, etc., Inspected and Authorised
During 1981-82

Sl. No.	Nature of Work	Name of Railway	Kms.
A. NEW LINES ---Nil			
B. DIVERSIONS (All on Broad Gauge),			
1. KORBA-GEVRA ROAD	.	South Eastern	3.593
2. VATVA-NEW GERATPUR	.	Western	6.81
3. SHAMGARH-GAROT	.	Do.	2.63
			13.033
C. DOUBLINGS (All on Broad Gauge)			
1. JANAI ROAD-DANKUNI (3rd line)	.	Eastern	5.43
2. BARUIPARA-JANAI ROAD	Do.	Do.	5.84
3. SANAND-AMBLI ROAD	.	Western	11.63
4. PIPLODA BAGLA-NAGDA	.	Do.	10.79
5. RAMGANJ MANDI-JALAWAR ROAD	.	Do.	11.64
6. KANWALPURA-DARA	.	Do.	8.95
7. GAROT-SHAMGARH	.	Do.	10.56
8. MULANUR-KUPPAM	.	Southern	12.08
9. PUDUKAD-IRINJALAKUDA	.	Do.	10.14
10. GOOTY-NAKKANADODDI	.	South-Central	16.00
11. JHALIDA-KOTSHILA	.	South-Eastern	11.73
12. MALHAUR-DILKUSHA	.	Northern	8.35
13. BRAR SQUARE-PATEL NAGAR	.	Do.	4.862
14. OKHLA-LAJPAT NAGAR	.	Do.	2.004
15. PATEL NAGAR-DAYABASTI	.	Do.	3.191
16. HAZARAT NIZAMUDDIN-TILAKH BRIDGE	.	Do.	3.135
17. BHARATWADA-GODHARI	.	Central	6.26
18. MAIHAR-UNCHERA	.	Do.	14.17
19. KASARA-JGATPURI	.	Do.	9.78
			166.542
D. CONVERSION FROM METRE TO BROAD GAUGE (All on the North Eastern Railway)			
1. CHHAPRA KACHERI-GORAKHPUR	.		181.493
2. GORAKHPUR-GONDA	.		152.403
3. GONDA-MALHAUR	.		105.438
			439.334
E. ELECTRIFICATION (Broad Gauge)			
1. AHMADABAD-ASARVA-SABARMATI	.	Western	6.00
2. KIRANDUL-KORAPUT	.	South Eastern	257.00
			263.00

APPENDIX A-2

New types of Locomotives and other rolling stock recommended to the Railway Board for sanction

On South Eastern Railway

Running of:

1. Regular running of 23165 mm (76' long.) B.G. coaches over the entire B.G. system.

On Central Railway

2. 10t. Diesel Crane (30' long jib) having 3 axle rigid frame to drg. No. 2 WD10 CR Alt. 1 having maximum axle load of 18t. manufactured by Jamalpur Workshop on BG sections.
3. 10t. Diesel Crane (35' long jib) having 3 axle rigid frame to Drg. No. 3 WD10 CR. (Alt. 1) having maximum axle load of 18 t. on B. G. sections.

On Southern Railway

4. 25 KV AC electric locomotive, type 'WAG-1' on various sections at specified speeds.
5. B. G. van, type 'BVZT' on various sections at specified speeds.
6. WDS-6 class Co-Co type Diesel Electric Locomotives on various sections of the Railway at specified speeds.

On Northern Railway

7. B. G. Brake Van type BVZT on various sections.
8. 45 nos. B. G. bogie Hopper Wagons of M/s NTPC Ltd. on the Yamuna Bridge-Tundla-Chunar-Chopan section at a maximum speed of 40 Kmph.
9. 10t. (B.G.) diesel crane on various sections.

On South Central Railway

10. BEML coaches fitted with all coil L.C.F. type Bogies, on all B.G. sections of the Railway at a maximum speed of 110/100 Kmph.

NEW TYPES OF LOCOMOTIVES AND ROLLING STOCK SANCTIONED BY COMMISSIONERS OF RAILWAY SAFETY

On South Eastern Railway

Running of:

1. 182 t. B.G. special wagon type BWZ on certain sections of Adra Division.
2. 180 t.—14 axle well wagon on the entire B.G. system.
3. Mobile Diesel Generating set on its own wheels on the specified route.
4. Single/Double Headed WAM-4 Class AC/MT Electric Locomotives on the Jagadalpur-Kirandul section.
5. WAM4 class AC/MT electric locomotives on their own wheels in dead condition over non electrified sections of the Railway.
6. WDS6 type/diesel electric shunting locomotive from Gomoh to Paradeep over the specified route (Light running).
7. Freight trains composed of 45 BOBX Wagons hauled by 3 WAM4 Electric locomotives on specified sections on trial.
8. Empty movement of 24 Axle 300t. special wagon of M/s. SAIL over the Bhilai-Bilaspur-New Katni route.
9. WDS8 class diesel snunting locomotives from CLW/Chittaranjan to different steel plants.
10. Self Propelled Tower Wagon on the S. Kota-Shimiliguda section.

11. WDS4B Type shunting locomotive from Haldia to Asansol.

On Central Railway

12. Empty bogie Hopper wagons with an axle load of 6.5 t. on various sections at a maximum speed of 40 Kmph.
13. Empty bogie Hopper wagons with an axle load of 6.5t. on the Mathura-Jamuna Bridge via Raja-ki-Mandi and Agra city B.G. route at a maximum speed of 40 Kmph.
14. Special train consisting of 14 air braked coaches hauled by a WDM-2 locomotive fitted with 28 LAV-1 Air brake system on Wadi Dadar section at a maximum speed of 75 Kmph. for conducting oscillation trials.
15. 16.25 t. axle load B.G. bogie container flat type 'BEKX' over Itarsi-Bhusawal section at 110 Kmph for oscillation trials.
16. WP, WDM-2 & WG class locomotives on the new Down Main line between Bharatwada and Nagpur at speeds upto 110 Kmph (for WDM2 only).
17. B. G. AC MU motor coach having maximum axle load of 20 t. and AC SCN 2 tier coach on their own wheels attached to a special train on Balharshah Tuglakabad section.
18. Empty movement of double decker coach No. 901 from Matuhma to New Delhi for exhibition at a maximum speed of 105 Kmph.
19. WP, WPI, WDM2, WGAWD/CWD, WDS4 and 4B class locomotive on Maihar-Unccha section at varying maximum speeds upto 110 Kmph (for WDM2 only).
20. Haulage of WAM/4-A loco fitted with imported Hitchai-Make traction motors typ HS 1050. in dead condition on Naini-Bhusawal section.
21. Transport of WDS/6 class locomotive No. 36014 from Tuglakabad to Balharshah at a maximum speed of 56 Kmph.
22. WAM/4-A locomotive fitted with HEM./Hitachi traction motor on Igatpuri-Bhusawal section at 75 Kmph.
23. Movement of WDM/6 class diesel electric locomotive from Naini to Balharshah via MKP, JBP, ET & NGP at a maximum speed of 55 Kmph.
24. B.G. Bogie container flat type 'BFKX' loaded with ISO series-I containers on certain sections.
25. WDM2, WDM6, WDS2, WDS6 and WDS4/4B types of locomotives on newly constructed Apta-Roha railway line for goods, passenger trains at maximum speeds up to 100 Kmph.
26. Double-headed 121-122 TN Exp., 123-124 AP Exp. and 125-126 KK Exp. trains at maximum speed of 100 Kmph on the G.T. route.

On Eastern Railway

27. WAM-4 class A.C. locomotive over specified sections.
28. WAG-1, WAG-2, WAG-3, WAG-4, and WAM-4 class of locomotives over specified sections.
29. WAM-4 class A.C. locomotive for regular haulage of the Rajdhani Express.
30. WAM-4 class A.C. locomotive in regular double/multiple headed operation over Gujhandi-Gurpa section.
31. WAM-4 class A.C. locomotive for haulage of 175/176 Neelachal Express from Gomoh to Mughalsarai (Grand chord).
32. B.G. Double Deck coaches on the Howrah-Dhanbad section.
33. WP, WDM-1, WDM-2 and WDM-4 classes of locomotives over a specified section of Dhanbad division.
34. BCX-Mark II type bogie wagon as parcel vans attached to Passenger/Parcel trains over certain sections of the Railway.
- 35&36. WAM-4 class A.C. locomotive over Bandel-Naihati and 4 other sections (2 sanctions).

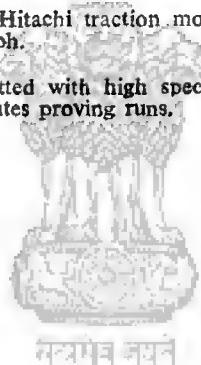
37. WAM4 class AC locomotive for regular haulage of 305 Up/306 DN Asansol Express on the Howrah-Asansol section.

On Southern Railway

38. Various types of engines mentioned in Safety Certificate No. 396 BG (single or coupled on Salem Jn.-Salem Market section at the maximum speed noted against each).
39. Broad Gauge Tower Wagon on the Arakkonam-Jolarpettai-Erode and Arakkonam-Renigunta sections at 40 Kmph.

On Northern Railway

40. 130t. well wagon type BWS, on certain specified sections.
41. BG special 245pt. 16-axled wagon from New Delhi to Mughalsarai at 40 Kmph.
42. 10t. axle load existing ICF all Coil bogie meant for 100 Kmph fitted with two alternators on the head-stock hauled by single headed YDM/YDM-4A Locomotive on Delhi-Rewari Section at a maximum of 110 Kmph for oscillation trials.
43. WDS-6 shunting loco on the specified route at 60 Kmph.
44. Rajdhani Express with WAP-1 electric loco on the New Delhi-Allahabad-Mughalsarai route at 110 Kmph.
45. WDM-4 locomotive with high speed bogies on certain sections at 100 Kmph.
46. WDS-4&4A diesel locomotives on the Firozepur division at specified speeds.
47. WAM-4A locomotive fitted with Hitachi traction motor type H.S. 1050 Er, on the Mughalsarai-Allahabad Section at 75 Kmph.
48. WDM-4 locomotive No. 18099 fitted with high speed bogie on New Delhi-Kanpur-Mughalsarai section at 130 Kmph for routes proving runs.



APPENDIX B-I

List of accidents inquired into by the officers of the Commission of Railway Safety during 1981-82

Sl. No	Brief Particulars	Casualties		Cost of damage to Rly. assets (Rs.)	Cause
		Killed	Injured		
1	2	4	5	6	
1.	Derailment of K. 6. Down Katwa Local between Samudragarh and Dhatrigram stations, Howrah Division, Eastern Rly. on 18-4-1981.	..	36	98,000	Tampering of Railway track by unknown persons.
2.	Derailment of 98 Down 'Venkatadri Express' between Malakavemala and Kalasamudram stations, Guntakal Division, South Central Rly. on 22-4-1981.	..	6	6,27,060	Tampering of track by unknown persons.
3.	Derailment of 190 Up 'Damoh-Guna Shuttle' in the station Yard of Bina Station on Central Railway on 22-4-1981.	2	10	15,000	Preliminary due to defects in Rolling Stock.
4.	Side-Collision of B-90 Up 'Bandra-Bombay VT Local' with 'CM-15 Down-Bombay VT 'Chembur Local' at Raoli Jn., Central Railway on 24-4-1981.	28	79	9,95,000	B-90 Local having been driven past the King's Circle Up Starter Signal at 'ON'
5.	Derailment of 125 Down 'Karnataka Kerala Express' between Surareddipalem and Ongole stations, South Central Railway on 19-5-1981.	..	3	1,51,250	Inadequacies in maintenance of Permanent Way, accentuated by inadequacies in maintenance of Rolling Stock.
6.	Collision between Accident Relief Train and SG 35 UP 'Budge-Budge Sealdah EMU Local' between Park Circus and Sealdah South stations Eastern Railway on 4-6-1981.	..	8	1,54,000	The EMU Local having been driven past Semi-Automatic Signal No. AB. 3 which was at 'ON' without exercising adequate caution.
7.	Accident to No. 416 Down 'Samastipur-Banmankhi Passenger' train between Badla Ghat & Dhamara Ghai stations on the Mansi-Saharsa section, Samastipur Division, North Eastern Rly. on 6-6-1981.	270 (As known)	100	6,12,481	Due to the disturbances set up on the train most probably in the wake of a sudden application of brakes acting in conjunction with a stormy gale combination of human and natural factors.
8.	Side-Collision between 1 Up Passenger train and a road truck between Dehri-on-Sone and Dehri City stations, Dehri-Rohtas Light Railway, on 11-6-1981.	3 (Pedestrians)	1	275	Rash and negligent driving by the Truck Driver.
9.	Collision between 132 Down 'Patna Gomoh Passenger' and Up DC Shuttle 3775 Goods train between Karmahat and Ranchi Road stations, Eastern Railway on 14-6-1981.	1	10	1,90,000	Due to the Up DC Shuttle having passed Up Starter and Advanced Starter Signals in the 'ON' position due to weak-brake power thus causing obstruction in the next block section and 132 Down not controlled short of obstruction.
10.	Derailment of 10 Down Passenger between Darjeeling and Ghum stations on Darjeeling-New Jalpaiguri, N.G. section, Northeast Frontier Railway on 16-6-1981.	34	15,000	Overspeeding of the coaches caused by running own a curve at speeds in excess of the maximum permissible, in a heavily and unevenly loaded condition	

1	2	3	4	5	6
11.	Collision between 1 KCR Down Special Goods train and 33 Down 'Indore-Bilaspur Express' between Bhanwartonk and Khong-sara station; South Eastern Railway on 16-7-1981.	50	49	36,53,000	Due to the Down 1 KCR Special Goods train begin lost control of on the gradient section owing to non-compliance of stipulated procedure.
12.	Derailment of 1 Up 'Delhi-Ahmedabad Mail' between Ambliyasan and Dangarwa stations, Western Railway on 18-7-1981.	31	56	15,07,000	Unauthorised interference of the track.
13.	Derailment of 2 PG 'Mixed Train' on platform line No. 6 of Patna Jn., Eastern Railway on 23-7-1981.	3	28	1,38,000	Spread of gauge aggravated by excessive speed.
14.	Collision between the empty load of KF Special Goods and 2 DSK Down Passenger train at Pilkhani station, Northern Railway on 24-7-1981.	..	3	66,250	Due to the Passenger train being received on the occupied Down loop line.
15.	Occurrence of casualties among passengers of 508 Down & 510 Down Local trains at Barasat station, Eastern Railway on 29-7-1981.	10			Due to a rail-post dislodged by miscreants coming in contact with the passengers of these trains.
16.	Collision between EC445 UP and EC CNB Special Goods trains at Yadugram block hut station on Gujhandi-Gurpa section, Eastern Railway on 3-8-1981.	2		68,20,000	Due to the Locomotive of EC CNB Special having been left unattended on a descending grade of 1 in 85 without taking proper precautions, resulting it its rolling down into the section and colliding with EC 445 Up.
17.	Collision between 82 Up Passenger train and parted runaway rear portion of Up Kota Special Goods train between Fatehpur Sikri and Rupbas stations, Western Railway on 8-8-1981.	4	45	4,52,500	International parting of UP Kota Special when it stalled on a rising gradient of 1 in 200, without due precautions being taken before uncoupling resulting in the rear portion rolling back and colliding with the Passenger train
18.	Collision between 535 Up Passenger and a Shunting Engine in the Gorakhpur Yard, North Eastern Railway on 11-8-1981.			57,000	Shunting Engine coming on to the running line from the siding which was not isolated from the running lines.
19.	Collision between 25 Up 'Island Express' and ER JD Goods train in Jolarpettai station yard, Southern Railway on 19-8-1981.	1	15	14,49,000	Due to the Express train being permitted to enter the block section which the Goods train had still to clear.
20.	Collision between 7 Up 'Tinsukia Mail' and 6 PGN 'Shuttle' train in Gauhati station yard, Northeast Frontier Railway on 20-8-1981.	6	17	3,38,430	6 PGN Shuttle was started from line No. 4 against the Down Starter Signal at 'ON' while 7 Up was being received on line No. 1.
21.	Derailment of 121 Up 'Tamil Nadu Express near Ralapet station, South Central Railway on 31-8-1981.	16	86	1,33,35,300	Train having been driven in excess of the authorised speed Contributory cause was the failure of the Management to curb the tendency on overspeeding by Drivers.
22.	Derailment of 29 Down 'Muzaffarpur Tata Express' at Barhiya station, Eastern Railway on 7-9-1981.	2		25,000	92 Down passed the Down Loop Starter Signal in the 'ON' position.
23.	Collision between 17 Down 'Madras Jammu Tawi Janata Express' and 423 Down 'Bitragunta-Vijayawada Passenger' between Tsundru and Tenali stations, South Central Rail way on 5-10-1981.	1	12	1,22,000	17 Down Express was permitted to enter the block section which was occupied by 423 Down Passenger lying stranded in mid-section.

1	2	3	4	5	6
24.	Fire in Coach No. CR 9300 of 4 Down 'Bombay-Calcutta Mail' at Bhatronpur station, Central Railway on 19-10-1982.	1	8	4,54,385	Explosion of Kerosene-burning pressure-stove used in unlawful cooking activities.
25.	Head-on Collision of 329 Up 'Howrah-Muzaffarpur passenger' with 45 Down 'Samastipur-Danapur Express' at Sarhajagat station, North Eastern Rly. on 12-11-1981.	7	49	1,40,000	Due to 329 Up being driven past the Up Main Home Signal in the 'ON' position.
26.	Derailment of 177 Down 'Pune-Jammu Tawi Jhelum Express' at Biringi station, Central Railway on 14-11-1981.	4	28	45,07,606	Due to dropping on the run of a locomotive component which formed an obstruction.
27.	Out-break of Fire in 209 Up 'Rewari Marwar Passenger' train between Borawar and Besroli stations, Northern Rly. on 17-11-1981.	3	12	1,20,000	Ignition of some inflammable material carried unauthorised by someone travelling in the compartment.
28.	Derailment of 5 bogies of 322 Down 'Nagpur-Tatanagar Passenger' between Sonua and Lotapahar stations, South Eastern Railway on 27-11-1981.	2	20	7,20,000	Most likely due to distortion of track which had been fully opened out for through packing.
29.	L-Xing Accident-Collision between 87 Up 'Tata-Patna Express' and a Tourist Bus at a manned level crossing between Burnpur and Asansol stations, South Eastern Rly. on 28-11-1981.	4 (Bus passengers)	14	2,000	Level crossing left open to road traffic at the time of passage of the train.
30.	Collision between 6 KM Passenger train and truck No. URJ 1695 at manned level crossing No. 37 C between Hapur and Haifzpur stations Northern Rly. on 1-1-1982.	6 (All on the truck)	7	630	Level crossing gate being left open to road traffic in the face of traffic in the face of the approaching train.
31.	Derailment of 3 Down 'Assam Mail' at Semapur station, North Eastern Railway on 24-1-1982.	10	..	55,700	Failure of inadequately maintained track under heavy lateral loads from an overloaded Parcel Van.
32.	Head-on collision between No. 21 Down 'Dakshin Express' and a Goods train at Agra Cantt. station, Central Railway on 27-1-1982.	64	26	75,60,000	Due to the Express train being driven past 3 approach Signals at 'Danger'.
33.	Side-Collision between 5 Down Kamrup Express' and a Military Truck at Dibrughat station, Northeast Frontier Railway on 3-2-1982.	5 (on truck)	2,600	2,600	Due to the truck driver approaching too close to the alignment.
34.	Derailment of 17 Up 'Madras-Jammu Tawi Janata Express' between Ghoradongri and Barabatpur stations, Central Railway on 7-2-1982.	..	1	4,39,000	Failure of Track.
35.	Derailment of 'Coal Special' train between Adderley and Hillgrove stations, Southern Railway on 21-2-1982	8	..	16,36,000	Due to the train getting out of control.
36.	Level Crossing Accident-Collision of No. S143-A Down 'Puri-Jharsuguda Express' with Motor Truck No. 2461 WGB at B class manned Level Crossing No. 3 between Hijli and Kharagnpur stations, South Eastern Railway on 3-3-1982.	4 (occupants of truck)	1	5,000	Crossing left open for road traffic at the time of approach of the train
37.	Level Crossing Accident-Collision between 131 Up 'Janyanti Janata Express' and a Tourist Bus at Level Crossing No. 34 C in Kolnur station yard, South Central Railway on 20-3-1982.	61 (All on the bus)	32	6,000	Due to the Bus having got into the path of the Express train-- Failure of Railway Staff and Bus Driver.

1	2	3	4	5	6
38.	Collision between 166 Down 'New Bongaigaon-Howrah Janata Express' and the parted load of Up Diesel Shunting Goods train between Purbachali and Naklipdham stations, Eastern Railway on 2-3-1982.	..	9	87,000	Admission of the Janata Express into the block section already occupied by the parted load of the Up Diesel Shunting Goods train.
		582	833	4,65,49,787	



APPENDIX B-2

1981-82

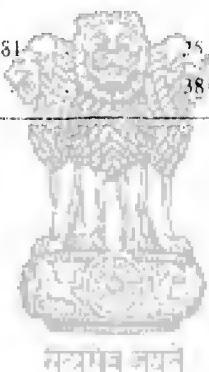
List of accidents entrusted to Railway Administrations for inquiring under Rule 2(5)(e) of the Statutory Rules

Sl. No.	Brief Description of the accident	Casualties		Damage to Railway Assets	Cause
		K	I		
1	2	3	4	5	
1.	Derailment of No. 139 'Ganga-Kaveri Express' between Tsunduru and Tenali stations, South Central Railway on 16-4-81.	..	..	1,33,133	Overspeeding by the driver combined with the defective permanent way resulting in distortion of track when the train was passing over that stretch.
2.	Derailment of 10 bogies of No. 69 Up Triveni Express at Jigna station, Northern Railway on 1-5-81.	..	..	2,72,448	Failure of Railway Equipment (Brake block defective casting)
3.	Collision of EMU Down Suburban train No. EG 23 with HPA Down Goods train between Tiruvottiyur and Ennore stations, Southern Railway on 2-10-81.	.. (1 grievous)	6	50,000	Failure of Railway Staff.
4.	Accident to BB-524 Down EMU Local train at Guma station, Eastern Railway on 9-10-81.	.. (1 grievous)	6	..	Due to the contact wire of the OHE breaking and coming into contact with passengers. (Breakage of wire due to cuts made by miscreants).
5.	Bumping of No. 33 Down passenger train against the Stationary TPGY Special Goods train at Pasur station, Southern Railway on 14-12-81.	.. (0 grievous)	22	30,900	Failure of Railway Staff.
6.	Derailment of No. 10 Down Arunachal Fast Passenger on 25-1-82 between Harmutia and Tatibahar stations on the Northeast Frontier Railway.	.. (2 grievous)	14	1,01,500	Due to prior tampering with track.
7.	Derailment of No. 29 Up Rayakalseema Express at Dharur station, South Central Railway on 1-3-82.	..	14	1,05,000	Due to right side leading wheel of the leading trolley of the inspection carriage No. RA-3 mounting on the tip of the tongue rail of Points No. 9 of Dharur station.

APPENDIX C

**Statistics of accidents inquired into by the Commission in the 10 year period 1971-72 to 1980-81 and
1981-82**

Year	No. of inquiries	Casualties		Damage to Railway assets
		Killed	Injured	
1971-72	18	62	287	18,59,731
1972-73	14	36	229	12,90,420
1973-74	21	106	360	41,41,633
1974-75	25	142	201	24,32,028
1975-76	30	54	271	29,02,495
1976-77	30	106	445	77,31,196
1977-78	27	129	319	1,27,86,949
1978-79	28	101	431	1,40,37,594
1979-80	29	174	477	1,09,69,249
1980-81	34	172	615	2,95,91,973
	256	1082	3635	8,77,43,268
Average for 10 years period 71-72 to 80-81	25	108	363	87,74,327
1981-82	38	582	833	4,65,49,787



APPENDIX D
Serious accidents inquired into by the Commission under main categories

Nature of accidents	1971-72 to 80-81	1971-72	1981-82
		*	*
Collisions in station yards		57	6 (6)
Collisions in mid section		21	7 (5)
Collisions in Automatic Signalling Sections (including sections under APB)		23	1 (3)
Derailments		78	14 (8)
Collisions at Level Crossings		35	4 (6)
Fires in trains		19	2 (2)
Miscellaneous		23	4 (4)
		256	38 (34)

*Figures in brackets pertain to 1980-81.



सरकारी लेखन

APPENDIX E
Break-up by principal causes of Accidents inquired into by the Commission of Railway Safety

Cause	1971-72 to '80-'81		'81-'82	
	No. of cases	% of Total	No. of cases	% of Total
1	2	3	4	5
COLLISIONS				
Train driven past station fixed signals at danger	34	13.4	5	13.3
Reception of train on an occupied line at a station	11	4.2	1	2.6
Irregular shunting by Driving Crew/Station Staff	9	3.4	1	2.6
Train driven without due care in Automatic Signalling sections (including APB)	23	9.0	1	2.6
Train driven without requisite care under conditions of total interruption of communication	..	..	..	..
Improper securing of Rolling Stock	2	0.8	2	5.3
Other failures of Station Staff/Driving Crew	20	7.8	4	10.5
Failure of other Railway Staff	1	0.4	..	..
Miscellaneous causes	1	0.4	..	..
DERAILMENTS				
Sabotage of track i.e., malicious interference by miscreants	15	5.8	3	7.9
Trains driven significantly in excess of authorised speed	8	3.0	3	7.9
Defective setting of Points	6	2.4	..	..
Track defects or failures	15	6.0	2	5.3
Rolling stock defects or failures	18	7.0	1	2.6
Combination of Rolling Stock and Track defects	5	2.0	4	10.5
Mismanipulation of trains by Driving Crew and other failures	5	2.0	1	2.6
Running over obstructions	..	..	..	..
Causes not established	6	2.4	..	..
COLLISIONS AT LEVEL CROSSINGS				
Failure of Gatekeeper or other railway staff at manned level crossings	17	6.6	4	10.5
Negligence of road users and others	18	7.2	..	..
FIRES IN TRAINS				
Electrical defects	8	3.0	..	..
Live spark from Loco	2	0.8	..	..
Negligence/omissions of passengers such as throwing lighted match-stick, cigarette, etc, carriage of explosive/cumbustible materials in contravention of Regulations, etc.	8	3.0	2	5.3
Cause not established	1	0.4	..	..
SUDDEN CONVULSIONS OF NATURE				
(Such as Cyclone or Flood)	3	1.2	..	..
ACTS OF PASSENGER IN DEFIANCE OF REGULATIONS				
—Leaning out of Carriages, Crossing of Railway lines, or travelling on roofs & foot-boards	1	0.4	..	..
MISCELLANEOUS HUMAN FAILURES				
OTHERS	12	4.6	3	7.9
	7	2.8	1	2.6
	256	100.00	38	100.00

APPENDIX F
Accidents under Section 83 Railway-wise for the four year period 1978-79 to 1981-82

Railways	Year	Collisions	Derailments	Level crossing	Fire	Misc.	Total
Central	78-79	8	37	8	5	18	76
	79-80	11	20	7	5	22	65
	80-81	8	31	5	9	18	71
	81-82	11	34	5	8	8	66
Eastern	78-79	6	26	1	..	..	33
	79-80	5	18	1	6	..	30
	80-81	8	22	5	6	..	41
	81-82	11	25	3	1	..	40
Northern	78-79	6	28	13	3	4	54
	79-80	6	31	37	..	..	74
	80-81	6	36	16	3	..	61
	81-82	8	34	18	3	..	63
North Eastern	78-79	4	25	14	1	6	50
	79-80	6	18	9	..	..	33
	80-81	7	21	10	2	..	40
	81-82	7	30	11	3	..	51
Northeast Frontier	78-79	2	27	6	..	23	58
	79-80	1	18	8	..	21	48
	80-81	2	18	4	..	37	61
	81-82	7	20	8	..	61	96
Southern	78-79	..	26	11	..	..	37
	79-80	3	26	9	1	2	41
	80-81	1	34	9	1	..	45
	81-82	4	27	5	..	1	37
South Central	78-79	6	32	4	..	2	44
	79-80	2	25	6	3	4	40
	80-81	3	35	6	1	5	50
	81-82	3	37	11	3	2	56
South Eastern	78-79	4	47	9	2	..	62
	79-80	11	61	12	..	..	84
	80-81	8	67	11	2	..	88
	81-82	9	80	7	2	..	98
Western	78-79	6	26	18	..	..	50
	79-80	2	28	22	3	..	55
	80-81	5	25	9	4	8	51
	81-82	1	24	6	3	4	38
Light Railways (Futwa Islampur & Dehri-Rohtas)	80-81	..	2	1	..	..	3
	81-82	..	5	2	..	..	7

APPENDIX G

Cause-wise analysis of 421 accidents falling under Section 83 of the Indian Railways Act into which Departmental Enquiries were held by Railways and the proceedings of which were sent for review to the Commission of Railway Safety

Derailments

1. Total	283
2. Failure of Axles/Journals/Roller bearings	36
3. Failure of Suspension/Bogie components	36
4. Failure of Brake-gear	13
5. Failure of Tyres/Wheels	14
6. Failure of Coupling Apparatus	5
7. Failure of/Defects in permanent Way	52
8. Mismanipulation of Train/Excessive speed	41
9. Incorrect setting of points by station staff	15
10. Sabotage of track/Obstruction placed on line	25
11. Miscellaneous (Faulty Loading, Maintenance Defects in Locomotives/Rolling Stock, Improper marshalling, Animals on line, etc.)	46

Collisions

1. Total	45
2. Train driven past Signal's at Danger	16
3. Reception on clear Signals on occupied line	4
4. Trolley/Lorry not protected	5
5. Failure of Station Staff	10
6. Failure of Guards	1
7. Failure of Driving Staff	6
8. Miscellaneous	3

Fires in Trains

1. Total	20
2. Electrical Defects	2
3. Malicious interference/Passengers carrying inflammable materials	8
4. Battery Box coming in contact with live cinder	2
5. Miscellaneous	8

Collisions at Level Crossings

1. Total	73
2. Road vehicles driven carelessly	55
3. Failure of Gatekeeper	15
4. Miscellaneous	3

APPENDIX H

Brief particulars of some accidents under Section 83 of the Indian Railways Act, enquired into by Railway Administrations

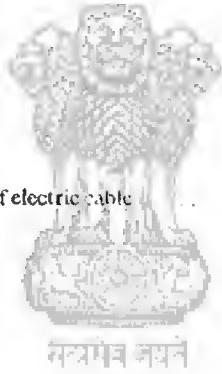
Nature of Accidents 1	Cause 2	Casualties K I		Cost of damage in Rs. 5	Recommendations 6
		3	4		
Collision					
1. At Khairah station, N.E. Railway on 22-6-81—237 Up Siwan Chhapra Passenger and coupled YG engines which were being backed from line No. 2 to line No. 3.	Failure of Railway Staff	..	..	20,000	..
2. At Gotan station, N. Railway on 8-11-81—No. J8 Dn. goods train and No. 96 Dn. 'Bikaner-Marwar Mail'.	Negligence of Driver of the Goods train.	..	..	904.50	(i) Empty stock supplied to Gotan for loading may be given proper C & W examination at Martia Road Depot where all facilities exist. (ii) Wagons loaded at Gotan must be weighed at the weigh-Bridge which has been provided for this purpose
3. At Achalda station, N. Railway on 11-11-81 Up E/BTPP Special Goods & E/401 Up Goods.	Due to interference of S&T staff in the relay room.	..	..	37,36,000.00	
4. At Rajpura station, N. Railway on 5-12-81 Up Holiday Special & T/PTA Goods load outside.	Driver of Up Holiday Special failed to stop his train at the Automatic Signal in red aspect.	..	..	30,000	Authority to issue competency certificates should be at the level of Asstt. officer.
5. At Jhansi station, C. Railway on 8-1-82 No. 106 Up Lucknow-Jhansi Passenger with Shunting Engine.	Failure of Railway Staff	..	..	93,700	
DERAILMENT					
6. Box wagon of Up BIA Special Goods between Tunia & Gohilkera stations on Chhattisgarh Division, S.F. Railway on 7-5-81.	Breakage of journal of the wagon due to seizure of roller bearing on account of hot axle.	..	..	3,00,000	
7. POBS Wagon of K.BWB Up special Goods between Barabpura & Champa stations of Bilaspur Division, S.F. Railway on 28-5-81.	Breakage of journal of the trailing trolley of the wagon.	9,88,000	The recommendations given by Chief Rolling Stock Engineer, Chief Engineer and Chief Traffic Safety Supdt. While enquiring into the derailment of Down Burdwan-Spl. at Kirodinmalnagar station on 3-1-81, for reviewing the schedule of examination of roller bearing axle boxes and installation of hot box detectors may please be followed up by Headquarters.

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8. 9 loaded BOBS wagons of Dn. Diesel SSR-201 Goods train between Chandiposh and Champajharan stations on Chakradharpur Division, S.E. Railway on 1-6-81.	Breakage of middle arch bar of right hand side of leading trolley of wagon due to an even loading	2,25,000	A rake which is examined at BXF goes to HSL for unloading & then goes to ROXY for loading. Again it comes to HSL for unloading and then goes to BXF for loading. Only then it is subjected to intensive examination. As a result rake runs for 5 to 6 days without intensive examination. The system of train examination may be reviewed and train examination may be introduced at ROXY also.	
9. DD-705 Dn. Goods at Jhilmili station, Waltair Division, S.E. Railway on 5-6-81.	Failure of Driver to control the train and stop before the Home signal at danger.	.. 2	30,28,900	Provision of catch siding for down trains at the approach of Jhilmili station is recommended.	
10. 2 bogies of No. ES 64 Suburban Electric train between Tambaram Sanatorium stations S. Railway on 5-7-81	Gearcase of bottom cover of motor coach No. 11038 had cracked and given way due to fatigue and had got entangled with the track while working the train.	.. ..	3,220		
11. 9 Wagons of OJA Special Goods train while entering Danishpet station S. Railway on 2-8-81	Breakage of top plate near the eye and dropping off of the broken eye piece, shackle stone and shackles and consequent unloading of the right leading wheel of the wagon.	.. ..	8,58,738		
12. 517 Up Goods Train between Alamanda and Kantakapalli stations, Waltair Division, S.E. Railway on 30-10-81.	Breakage of journal due to failure of Roller Bearing of a wagon.	..	3,08,000		
13. Up Nasik special Goods train between Galan and Kajagaon stations, Bhushawal Division C. Railway on 27-11-81.	Breakage of the spring of the rear trolley of a wagon.	1 1	1,59,950	(i) Introduce necessary colour indications for brake power certificates for loads which have been intensively examined or indicate this on the load itself. (ii) The points of examination for intensively examined load or otherwise should also be fixed irrespective of the run rather than in terms of Kms. earned before the load is examined.	
14. 9 wagons of EC 131 Up Goods train between Shivasagar Rd. and Kumaiju stations, E. Railway on 29-1-82	Leading axle box journal broken down and seized the roller bearing of a wagon.	.. ..	2,82,000		
15. Engine and 3 bogies of 370 Dn. Passenger train at Dhathan Sabib station, Delhi Division, N. Railway on 8-2-82.	Negligence of Points man.	2,000	Vacancies of Levermen and Cabinmen should be filled expeditiously.	

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16. 1 MB Mixed train between Marwar Mundwa and Khawana Stations, Jodhpur Division N. Rly on 22-2-82.	Due to breakage of axle.	6,054	A nominated line with apton and proper drainage be provided for primary maintenance.	
17. 2 wagons of Box special at Santaldih station, S.E. Railway on 5-3-82.	Breakage of one spring at the right hand side of the front trolley of a wagon.	.. ..	2,65,000	(i) Box empties should be worked out only to BZE washery and not to any station on main line as per extant order. (ii) Suitable C&W examination should be done before the boxes are despatched to any loading point.	
18. 29 TP wagons of UP JAT Load between Bari Brahman and Vijaypur, Jammu, Firozpur Division, N. Rly. on 20-3-82.	Seizure of roller bearing.	.. ..	33,06,000		

AT LEVEL CROSSINGS

19. 445 Down Badnera-Amaravati train dashed against a tractor at unmanned Level Crossing No. S-1-B between Badnera & Amaravati, C. Rly. on 16-4-81.	Negligence of tractor driver	2	3	(i) This gate should be manned. (ii) Arrangements should be made to avoid engine running tender foremost.	
					
20. Mogo-Pilot Engine and a Matador at manned Level Crossing No. C-16 between Mullanpur and Baddowall Stations, Firozpur Division, N. Railway on 27-7-81.	Failure of Railway staff and others	1	1	(i) The working of Mechanical and Electrical staff in the Loco Sheds should be streamlined for proper fitment of electric headlights. (ii) Approved type of headlights should be provided on the tenders of the Pilots running during night on Firozpur Division. (iii) The Pilots which are scheduled to run during day time only should be brought back to the Sheds according to the scheduled timings.	

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21. No. 70 Down Triveni Express a truck at manned Level Crossing No. 26B/2 between Garhi Manikpur and Kunda Harnamganj Stations, Lucknow Division, N. Railway on 25-1-82.	Negligence of Truck Driver and Gateman.	150	(iv) The awareness of Gateman of manned Level Crossings of SR 229/4(a) should be improved by an intensive drive by Permanent Way Inspectors.	
22. No. 142 Dn Coromandal Express and a motor truck at 'B' class manned Level Crossing between Mandasa Road and Baruva stations, Khurda Road Division, S.E. Railway on 14-2-82.	Failure of Railway Staff.	.. ..	12,30,000	(i) Railway Board's extenl orders regarding posting of literate men at manned Level Crossings and exchange of Private numbers with SWM/ASM wherever phone communication is provided to be implemented. (ii) To give intensive training for literate staff to go on promotion as Gate-man. The post be treated as separate cadre and pay scale raised one step above the gangman.	
					
FIRE					
23. Motor coach of BL/5 Down Bombay VT-Badlapur Local train caught fire near Kalva station, Bombay division, C. Railway on 28-10-81.	Failure of electric cable	.. ..	13,600	(i) Re-cabling of overdue motor coaches should be done on programmed basis with a schedule for early completion. (ii) All Fire Preventive Measures to EMU stock as per "Code of Practice for Prevention of Fire of EMU Stock, January, 1980" published by RDSO, Lucknow should be undertaken on programmed basis.	
24. LR No. 3434 marshalled next to engine, of 90 Up Bhopal-Ujjain-Indore Passenger at Ujjain station on Ratlam Division, W. Railway on 23-2-82.	Due to coal heap burning in the compartment	.. ..	15,000	..	
25. Pantry car of No. 25 Dn. Bombay-Delhi A.C. express Ratlam Division, W. Railway on 15-3-82.	Ignition of gas which leaked out due to bursting of the flexible hose pipe connecting the cylinder to the manifold. Cause of ignition of gas could not be established. 10		(i) Dining Cars having LP gas should not be attached to trains hauled by steam locos. (ii) The gas cylinders and the valves to control them should be provided in a cubicle of proper design to take into account safety from spark leakage of gas, etc. (iii) The cylinders should be properly strapped to avoid damage by jerks. (iv) Automatic excess flow check valve should be provided.	

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(v) The cubicle should be provided with fire extinguishers with gas detector, thermal detectors and automatic control. The fire inspector should inspect the installation atleast once in a month.

(vi) The entire dining car should be painted with fire retarding paints and electric wiring should be fire proof.

(vii) Instructions issued by W. Railway vide letter No. M 380/4/4/62 dt. 28-2-76 are not being followed rigidly. The instructions be repeated once again and rigid compliance enforced.

(viii) All the dining car staff should be given training in routine maintenance operation of the LP gas equipment. They should also be trained in fire fighting.

(ix) The gas Company should be asked as a part of the contract to periodically inspect, repair and maintain the LP gas equipment. At the end of each trip leakage should be checked with a gas leak detector.

(x) Regular inspection and scheduled replacement of flexible hose pipe must be done.



*Legend : C:Central; E: Eastern; N: Northern; N.E.: North Eastern; N.F.: Northeast Frontier; S: Southern
S.C.: South Central; S.E.: South Eastern and W: Western.*